AN

ESSAY

OF THE

PATHOLOGY

OF THE

BRAIN

AND

Nervous Stock:

In Which

Convulsive Diseases

Are Treated of:

Being the Work of *THOMAS WILLIS* of *Christ-Church* in *Oxford*, Doctor in Physick, and *Sidly*-Professor of Natural Philosophy in that Famous Academy.

Translated out of *Latine* into *English*, By *S.P.*

LONDON,

Printed by *J.B.* for *T.Dring*, at the Signe of the *Harrow* at *Chancery-Lane-End* in *Fleet-street*. 1681.

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The Authours Epistle Dedicatory.

To the Most Reverend Father in Christ, His Grace, Gilbert, *by Divine Providence, Archbishop of* Canterbury, *Primate and Metropolitan of all* England, *and One of His Sacred Majesties most Honourable Privy Council.*

IT is so Ordained by the Laws, most Noble Prelate, that whatsoever shall happen to be built upon any ones ground, it shall be his own, by right of accession. Since therefore, to that work which I lately attempted, concerning the gifts and Nature of the Sensitive Soul, as also the Affections of the Brain, and nervous stock, and the various Diseases which belong to them, I had placed the Anatomy of the humane Head for a foundation; it was altogether necessary (this Treatise being Dedicated to your Grace) that whatsoever building should be raised on that Foundation, should truly, and rightly be said to be yours: And so indeed, we continue the fault, we had sometimes Committed, and it becomes not only a step, but what is more, an obligation to the following Crime; that at length, we seem rather to perform a Duty, the name of a fault being lost, than to become Criminal.

But in the mean time, this matter in which I busie my self, may not be said to be unfit for your Knowledge, or to be disagreeing to the business of the Church, over which you most happily preside; For both those Epilepticks which are to be met with here precipitating themselves into the water or the fire, and those whose members variously Contracted and distorted with Spasms or Convulsions, and those whose whole Bodies so bent, that they could not stand upright, by and by, as if by Inspiration of the Devill, they are agitated with Stupendious leapings, and other wonderfull gesticulations. These I say, and many other Sick men whom I here every where describe, seem not much to differ from those whom we read of in the Evangelists, to be cured by our Lord Jesus Christ; and although such be to be cured however Contumatious and rebellious they are, the Physitian, however Skillfull he be, ought allways to Implore the help of the Heavenly Power, to be assisting to him, being above all the

Strength

Strength of Medicines. Therefore and by right the Disease by the Ancients called Holy of the word *Theoria*, and the rest of our Pathology, as if it contained in it a certain Divinity, explicates the Disease to be cured no lesse with prayers and fastings than with Medicines, and therefore should desire greatly to call upon the Authority of Holy men, and to be helped by the Power of your Sanctity.

Besides it is no new thing that there should be an Entrance into the Church thorow the Spittle, for that it appears, our Saviour to have used almost this method, who would for the most part, that the health of the Soul, should take its beginning from the restored health of the Body. And truly, as the Stupid *Deliriums* of Melancholicks, the Caninish madness, and others sprung from an infirm Brain, have driven some, both from the Communion of Saints, and from the Society of men, if these had been profligated by the help of our Art, it would not be dispair'd of, but that the men should not only, growing well, have left both at once their Diseases and Errors, but also should have become Wise.

It remains, that I Supplicate the Great God, that he will render to his Church, the peace he has happily given to the Common-wealth, that he may take away the darkness from the eyes of the miserable people, that he may withdraw the fury from their mindes, and for a pledge and advantage of so great a benefit, that he may long keep safe and in health, your Grace, the mighty Pillar, and Glory of the Reformed Religion, which is Cordially desired by

Your Graces most humble

and Devoted Servant,

T. W.

of

Of Convulsive Diseases.

CHAPTER I.

Of Spasms or Convulsive Motions in Generall.

IN handling the Convulsive Distempers, many Physitians distinguish between the *Spasme* or *Convulsion*, and *Convulsive Motion*; by the first they understand a constant Contraction, whereby the member becomes stiff and inflexible; by the Second, swift motions, and Concussions, which, coming between, cease, and return alternatly: But neither those who have observed these notes of difference, nor other Authors, have taken notice that they are continual: for that by the words *Spasme*, and *Convulsion*, they often designe a certain Spasmodick or Convulsive Affection; wherefore to distinguish it better, we will call the former distemper with *Cardan*, tetanon, a continual Convulsive Cramp, but the other *Spasm*, or, a *Convulsive motion in generall*.

But that the irregular Nature, and Causes of Convulsive motion, might more rightly have been made known, it should first have been declared, after what manner the regular motive function, is effected in an animated Body: but the more full Consideration of this, because it belongs to the Physiologie, or Reasoning of the Nature, of the Brain, and Nervous stock, it is deferred to another Discourse: For the present, we will signifie in a word, as much as shall serve for the elucidation of the matter proposed. That the animal Spirits are the next Instrument of regular motion, and that their Action, or moving force, consists only, in that they being more thickly heaped up together, in the motive part, and there spreading themselves in a more large space, they blow it up, and intumefie it, which for that reason, being contracted, as to its length, draws to it self the part hanging to it. In our description of the Nerves already published, we have shown this kind of motion to be twofold, to wit, Spontaneous, and meerly natural, the Instinct of this is derived from the Cerebel, but of that from the brain, but both through the pipes of the Nerves, as it were the channels, both to the muscles, and also to the fibres, interwoven with the membrains, and other motive parts of the *Parenchyma*, or Inwards; Lastly, in all these, the various actions are so expeditiously effected, which either natural necessity, or the rule of the will requires, by that only means, that there is an intimate Conjunction, and communication of Duty, and most swift Commerce, between the animal Spirits, which Constitute the *Hypostasis* of the sensitive Soul, within the foresaid parts, disposed, or fitted by a continued *Series*. But there is this notable difference between the motion of a muscle, and that performed by other parts; for in these, the action is most often circumscrib'd within the bounds of the motive body, so as its membranes only, or one part of the inward moves another, and consequently this is moved of its neighbour: But in the musculous stock, usually the moving part is placed in one member, and to be moved of another next it (although within some musculous part, as the Heart and *Diaphragma*, they properly for the most part move themselves only) hence the Membranes and Inwards, are said to have as it were an intestine, and vermicular Motion; such as where-ever it is begun, the Spirits there more thickly gather together, and Spreading themselves forth, they first intumisie this part, then going forward another, and so farther, till at last they draw the hindermost parts, and by this means transfer an intumifaction, and therefore a motion, from one place to another; almost after the same manner as worms, and other Creeping creatures make their progression. But to this motive function of the Membranes and Inwards, if it be frequent or undiscontinued, plenty of spirits are required, which notwithstanding execute their task calmly enough, without tumult or great force: And indeed it is to be observed, that the Animal Spirits, flow not more sparingly into the Membraneous Inwards, than into the Muscles; as it appears from the

How the regular Motion is Effected.

Its beginning twofold.

The Subject also twofold.

more exquisite sense of those parts, and by the manifold insertion of Nerves within them, and the diversity of divarication, through the foldings and *fibres*, although in the mean time, the muscles are watered, with a more plentifull influx of Blood: But as to the motion, performed in the musculous stock, the heaping together, and rarefaction of the Spirits, through the whole joynting of the motive part, suddenly, and at once unfolded, are performed with such force, and strength, as the attraction of the muscle, in its motive endeavour, may exceed the force of a pully or windlace; and when this force, only depends on the expansion or rarefaction of the Spirits, seated in the motive part, we can conceive it to be no otherwise, but that the Spirits so expansed or stretched forth, as it were fired, after the manner of gunpowder, to be exploded or thrown out. But we may suppose, that to the Spirituous Saline particles, of the spirits inhabiting the interwoven *fibres* in the muscle, other nitrous-sulphureous particles, of a diverse kind, do come, and grow intimately with them, from the arterous blood, flowing every where within the same *fibres*: Then as often as the particles of either kinde, as *Nitre* and *Sulphur* combined together, by reason of the instinct of motion brought through the nerves, are moved, as an inkindling of fire, forthwith on the other side bursting forth, or being exploded, they suddenly blow up the Muscle, and from thence cause a most strong drawing together: for indeed it seems to be ordained for this end, that the Muscles are imbrewed much more plentifully with the arterous blood, than the membraneous inwards: to wit, that the Elastick coupling of the spirits, being consumed, and perpetually falling off, through the very often, and sometimes continual motion, might be by that means supplyed, from the fresh sanguineous juice: in the mean time, that the spirits themselves, being supplyed in a smaller quantity, through the small nerves, might even like old Soldiers continue longer in the same station, and follow their manifold coupling or labour. How else are labouring beasts supplyed with a sufficient stock of spirits, for so much labour, whilst they exercise allmost all their muscles, by a swift course for many howers, yea sometimes a whole day: or who can believe that a little handfull of spirits brought through the small branches of the wandring and Intercostal pairs of the Nerves to the heart, can be able by their own strength to effect that its so strong and indiscontinued motion? Indeed it seems, that of necessity there must come to them from the blood perpetually, auxilarie aid, and those afterwards to be allways exploded. For this reason certainly, the motive virtue, both of the Heart, and the rest of the Muscles, becomes more strong and Elastick, above any mechanick Organ: to wit, for as much, as the animal spirits, acting every where in the musculous stock, get to themselves an explosive *Copula*.

The Motion of a Muscle is a certain explosion of the Spirits.

If any one shall be displeased at the word *Explosion*, not yet used in Philosophy or Medicine, so that this Spasmodick Pathologie, standing on this *basis*, may seem only *ignoti per ignotius explicatio*, an explication of unknown things by more unknown things; it will be easy to shew the effect of this kinde of motion, and very many examples, and instances both concerning natural and artificiall things; from the Analogie of whose motions, in an animated body, both regularly and irregularly performed, most apt reasons are to be taken. For besides the mixtures of *Nitre* with *Sulphur*, with *Tartar*, and with *Antimony*, all which are fired with a thundring noise; also *Aurum fulminans* or *fulminant Gold*, and a Composition of salt of *Tartar*, with *Nitre* and *Sulphur*, without any actual fire, being only thoroughly heated, are exploded with a vehement Crash; also to this may be referred, many Liquors, which being mixed together, or poured upon some certain bodies, cause or stir up violent motions, and plainly Explosive: The spirit of *Nitre*, and the liquor of congeled *Antimony*, being powred on one another, or either of them thrown upon the filings of Iron, cause a great *Ebullition*, with heat and black smoke. It is commonly known, what heat or effervescency, and force plainly explosive, arise from fixed Salts melted together, and from acetous or sharp salt of every kind, mixed with one another: Nor is the effect of Explosion less seen, when a Liquor imbrued with a volatil Salt, as the spirit of Harts-horn, or of blood, is put to a saline, either fixed or acetous *Stagma*, or sulphurious *Nitre*, to wit, the particles being vehemently stricken one against another, leap up with a force, and on every side are carried forth, a great

great way; which without doubt, if they were restrained within the space of any body, as the *fibres* of a Muscle, they would suddenly intumisie it, and so would constitute an Instrument of Local motion. Concerning this thing, we have more fully discoursed already in our *Neurologie*, or Tract of the Nerves, and perchance we may yet publish the explication of this more fully and more accurately some other time.

In the mean time that this opinion may not be thought altogether new, and that I have exposed it as a childe of my own brain, that had no other Patron, I will here shew you the assertion of the Famous *Gassendus*, which as it openly favours this our Hypothesis, and in some sort gave an occasion of it, so perhaps it will give to it some Authority. 'Therefore this Rational man, weighing in his 'minde, how much that force or strength might be, with which, not only the 'Arm, or Thigh, but the whole animal Machine, is moved, govern'd, lifted up, 'and carryed up and down: He adds, Who can easily comprehend that small 'thing, whatsoever it is, within the body of an Elephant, whether we conceive 'it to be a soul, or spirit, or any other beginning of motion, that it should be a-'ble to agitate such a bulk, and to cause it to perform a swift, and regular dance? 'and so much the more, for that, when as that small thing within that body, no 'longer flourishes, there is need of so much outward strength, to remove it never 'so little from its place: but indeed, the same fiery nature of the soul, serves 'chiefly to this, which, although it be a very little flame, it is able to perform 'within the body, by its own mobility, the same thing in proportion, that a 'little flame of Gun-powder does in a Cannon: whilst that it not only drives 'forth the Bullet, with so much force, but also drives back the whole machine, 'with so great strength. But indeed he says as to the spirits, which (like ex-'ploded Gun-powder) cause the agitation, it is doubtfull, whether it be they, 'which come from the brain, or those in the little tendons as it were of kin to 'them or springing from them, that are thought to do it; But although either 'of them concur, yet they seem to be more presently destinated to this office, 'which are those of the same kin or off-spring in the Tendons. There needs no more, it is declared, that the motive function depends on the *Elastick Copula*, of the animal spirits, and its decision or abating. But from this being supposed, (which indeed we may suppose with very great probability) it easily follows, that the Convulsive motions proceed from the like cause: For whosoever shall consider the sudden puffings up, the violent and strong Contractions, in the members and affected parts, yea sometimes the most impetuous concussions, and violent throws of the whole body, can conceive no less, than that very many heaps of the animal spirits are exploded, or thrust out, even as lightning breaking forth from a Cloud. Further from hence it may be Argued, by a reciprocal Argument, that because the Spasmodick motions are explosive, that therefore the regular are also produced by the explosion of Spirits: But after what manner, and by what means, and from what causes, the animal spirits being exploded, or thrust forth; produce Spasmodick affections, shall be our present business, a little more largely, and plainly to demonstrate, however difficult, and abstruse the matter seems to be.

The Conjunct Cause of Spasms.

We will not here stand to recite many opinions of others, concerning the Nature, and causes of a Spasm, or Convulsion; that which was most common, and long famous among the Ancients, that this distemper was only produced from repletion or inanition, or from fullness or emptiness, (however, besides the authority of *Hipocrates*, for the establishing of this, an example is brought, of a Skin, or the strings of Lutes, which are wont to be contracted, being either filled with a moist, or empted by too dry an aire) easily falls of it self; because it seems to suppose (that which is credible to none by Experience, the fragility of a *Nerve*) to wit, that the *Nerves* themselves, after what manner soever *abreviated*, and contracted, are able with a certain force, to draw to them the Muscles. If that it shall be said, that repletion or inanition, ought to be understood, in respect of the solid parts, which are wont to be drawn together; it may be observed to the contrary, when as the Muscels and Nervous stock, are very much watered with a watery humour, as in an *Anasarca*, or are plainly destitute of the same, as in the Consumption, or Mirasmus; yet no Convulsive motions are for that reason excited: among the moderns, very many have determined,

Not repletion or fulness or inanition or Emptiness.

ned, irritation of the Nervous parts, to be the cause of Convulsion; taking their Conjecture from thence as I suppose, for that by ocular inspection it appears from the Vellication it self, and by the only touch of the Nerves, that spasms are induced: And indeed we have clearly observ'd, in the dissection of a living whelp, that the knife being put upon the naked ends of the spinal Nerves, presently both themselves, and the Bodies of the Muscles, in which they were inserted, were hauled: neither is it unusual, that spasms are excited almost in every man, by the punctures of the Nerves and Tendons. I remember by reason of an Ulcer, in the Arms of a certain man, that the Tendons of the Muscles were laid open, which when touch'd by the Surgions Instrument, caused in the Patient a certain rigor, through his whole body, and forthwith a Concussion arising, made him to quake for a good space. But in truth, albeit we grant the irritations of the Nervous parts, not seldom to serve the turn of the evident Cause, and further that sometimes this solitary Cause, produces more light and transient spasms; nevertheless, that the more grievious paroxisms of this Disease, and their frequent repetitions by turns, may be duly unfolded, it behoves us to investigate, or search out other, and deeper Causes, to wit, the Conjunct and procatartick Cause.

Forasmuch, as spasms never happen but in a living Body, where the Nervous parts are blown up, and grow turgid with the animal Spirit, we may readily Conjecture that those animal Spirits themselves, are, as in regular motion, so also in the Convulsive, the next Instrument of Action: to wit, so long as they are imbued, with a fit and moderate explosive *Copula*, and are moved to that striking forth, only by the Command of the Appetite, or instinct of Nature, they bring forth motions altogether regular; but if the same Spirits get to themselves an heterogeneous *Copula*, and too much Elastick, or if they are snatched into their Actions, more impetuously and vehemently than they should be; they even like unbridled Horses, pricked forward with Spurs, leap forth inordinately or throw off, or explode violently their *Copula*, although genuine and natural: and so they carry away the containing parts, as it were a Chariot tied to them, together with themselves, with a fierce and perverse motion.

There is a double Cause and two kinds of Spasms. Irritation.

When therefore as aforesaid, the Convulsive motions are chiefly stired up for two Causes, hence, as many *Species* of them are ordained. For first, it happens that a Convulsion is induced without a procatartick Cause, or heterogeneous *Copula*, first acquired only from a solitary evident Cause: For so a vehement passion, impressed on the brain, a dissolution of the parts, hapning somewhere in the Nervous stock, a spasmodick passion is suddenly brought upon some, whose brain and Nerves are of a more weak Constitution: for that the animal spirits do trouble the containing parts, the improportionate Object flying from them, and by striking vehemently their *Copula*, though very agreeing it blows them up, and so they pull others annexed to them: Spasms being after this manner excited, because the natural *Copula* of the spirits in them, is stricken more vehemently, they are after a manner explosive, which notwithstanding, quickly leave off, and very often pass away with moving of the viscera, or Members; only with a trembling, and some horror, into a fainting of the spirits. But Secondly, Convulsions, whose paroxisms are more grevious and stay longer, or are oftener repeated, seem altogether to depend on a procatartick Cause, or a previous disposition, and to arise from some other Conjunct Cause, besides Irritation. And therefore in this Case we suppose, that the heterogeneous, and greatly explosive particles, do increase with the spirits, acting in this or that region of the Body: then from this wicked Combination, and restless Collision of this kinde of matter, and the Spirits, frequent and vehement explosions being brought forth, the spasmodick Paroxisms are induced.

A preternatural explosive Copula.

But besides the Elastick *Copula*, which every where happens to the Spirits, from the arterous Blood, and from whose orderly explosion, the motive force is performed, according to the Beck of the Appetite, or instinct of Nature, in all the Nervous parts; (as we have elsewhere declared) also sometimes other kinde of little bodys, of a fierce nature, or rather like *Gun-powder* or *Nitre*, come to the Spirits, and intimately adhere to them, when frequent and suddain divorces of this matter, from the Embraces of the Spirits, happen from the mutual striking together of the particles, the conteining Bodys are variously blown

up

up, and ſo are thrown into Convulſive motions. In truth, as often as the Spaſmodick Affection becoms habitual, that the Convulſive Paroxiſms ariſe not rarely on their own accord, and without any evident cauſe, but ſtill on every light occaſion; the procatartick Cauſe of ſuch a diſeaſe, conſiſts in the evill diſpoſition, of ſuch a ſort of animal Spirits: For neither is the Serous filth, or other leſs ſharp humours, although depoſited in the very ventricles of the Brain, or about the origine of the nerves, ſufficient to ſtir up ſuch a ſickneſs: For that I have ſeen in the heads of dead people, oftentimes the middle part of the brain, and the very beginings of the Nerves, wholly covered with a limpid water, who, whilſt they were alive, had neither the Epilepſie, nor Convulſive Motions: But to the producing or theſe motions, very active Bodys are required, ſuch as are Saline, and Sulphereous, which being combined with the Spirits, and then on a ſudden breaking from them, they imitate the combinations, and violent exploſions, of particular mineralls. For indeed, if in regular and ordinary motion (as we have intimated) the Muſcles cannot get a motive force, and elaſtick ſtrength, unleſs a certain exploſion of the animal Spirits be ſuppoſed, certainly much more lawfully may we aſſert, that, epileptick fits, and other admirable Convulſions, which ſtill happen to be excited, complications of the ſame Spirits, with other very firce particles, and vehement eliſions, or ſtrikings of theſe, one againſt another, are required. But, as to this kind of Spoſmodic *Copula*, becauſe it differs from the natural and ordinary, which we have elſewhere ſhewn to be in regular motion, and to be ſupplyed from the blood; it behooves us to inquire, from whence it comes, and by what means, and in what places, it is wont to get to the Spirits.

As to the firſt, it is to be obſerved, that Spaſmodick exploſions do every way happen, not only in the muſcles, to which only they are limited, which effect the regular motion, but alſo in the membranes, to wit, the ventricle, meſenterie, and other parts almoſt without blood: beſides, that the exploſions themſelves, in the Convulſive Affection, though they are excited contrary to the will of the Appetite, and the manner of Nature, are far more vehement, and do longer continue, than in the regular motion: out of which it ſeems to be manifeſt, that the Exploſive Spaſmodick Copula, doth come from ſome other place, than the Effe?ice of Regular motion: And indeed, it is probable, that, that flows not, as this, from the arterous blood, running every where among the muſculous *fibres*, but deſcends from the Braine, with the Liquore watring the Nerves, and ſo is heaped up, about their beginnings, middle, proceſſes, enfoldings, and Extremities, as it were the mine of the Convulſive diſeaſe. Indeed nothing appears more evident, than that the Spaſmodick Diſeaſe, doth moſt often ariſe, by reaſon of the evill firſt fixed in the Brain, and from thence is tranſmitted, into various parts of the Nervous Syſtem: for it happens from hence, that a vehement Paſſion, as of fear, or Anger, or of Sadneſs of ſpirit, affecting the inhabitants of the *Encephalon*, the paſſion called Hyſteric, and Hypochondriac, doth ſo often ariſe: Further, that in the evill Criſes of Feavours, when the aduſt recrements of the blood, are transfer'd into the head, Convulſions do generally ſucceed. Moreover, and this is the reaſon, why the Vertigo, the inflation of the head, torpor of the minde, and other accidents of the Supreme Region, are wont to be the *proæmium*, of Spaſmes preſently following, in the Inwards, and not ſeldom, in the whole Body. Wherefore it is not to be doubted, but that the heterogeneous, and exploſive particles, are inſtilled from the Blood, together with the nervous juice, into the Brain; which afterwards being thruſt forth, into the nervous ſtock, do there grow to the Spirits, and with them bring on a Convulſive diſpoſition. In truth, the Spaſmodick diſtempers, which are either univerſal, or at leaſt occupie many parts of the body at once, ariſe for the moſt part, by this only means. But in the mean time, we will not deny, but that particular Spaſms, which contain themſelves within Certain places, the Head being no ways affected, are induced ſometimes by other means. For if the nerves imbibe their humour from either end, to wit, the root, and the extream fragments, (which both the learned *Gliſſon* maintains to be moſt likely, and by us is ſhewed in our Neurologie, not without great probabillity) it may be from hence inferr'd, that the Spaſmodick particles are broght inwardly, not only from the beginning of the Nerves, but ſomewhat alſo by their extremities: Therefore that perhaps appears clear and

The exploſive Spaſmodic Copula not immediatly from the Blood but from the Brain.

Sometimes received from the ends of the Nerves.

plain enough, that from the spleen being evilly affected, Spasms arising about its region, do not seldom affect the *Hypochondria* and *Præcordia*. I have known some, from a tumour or ulcer existing in the Mesenterie, womb, and other inwards, were wont to have Convulsions, both in the grieved part, and also all about it; the reason of which seems to be no other, than that the heterogeneous particles being more plentifully heaped up, in the affected place, Creeping also into the nervous *fibres*, planted nigh thereunto, supply them with matter for Convulsive motions like to fired gunpowder: But indeed, Spasms arising from such a cause, are not wont to diffuse themselves far about, nor always to ascend to the Head.

These things being thus premised, concerning the inward and next Cause of the Spasmodic Distemper, which we affirm to arise chiefly, and most often, from the head it self, and in some respect also from the extremities of the Nerves, it now remains, that we more particularly declare, the Various remoter Causes in either Kinde, and the manifold provision of this disease. The Convulsive Disease therefore, for the most part, takes its original from the head: to wit, as often as the heterogeneous and explosive particles, being diffused from the blood into the Brain, or its medullarie Appendix, are afterwards derived to the nervous stock, and there grow together with the Spirits: But this happens to come to pass from various causes: for there are very many ways and means, whereby the morbifick matter is admitted into the head, and very many also, whereby it is deduced into this, or that region of the nervous System; and according to the various translations of this kind of morbifick matter, the divers kinds of Convulsive motions are constituted.

The more remote Causes of Spasms.

1 The morbifick matter is heaped up within the Head, by the defaults both of the blood sending, and of the Brain receiving it.

Therefore, that the Heterogeneous and Spasmodick particles are admitted into the Encephalon, it is to be imputed to the fault, both of the blood sending, and of the Brain receiving it.

1. When the Blood powrs upon the Head the morbifick matter, either all its whole mass is depraved, as it frequently happens in malignant feavours, also in the Scorbutick, cacochymick, and chiefly in an originally corrupt Distemper; or the Blood of it self innocent and incorrupt, receives elsewhere malignant little bodys, and afterwards fixes them on the brain, so in great impurities of the Inwards, and chiefly when any parts are affected with an Inflamation, or virulent ulcer, or hurtfull ferment, for from such mines the taint of the disease, the noxious particles bubble up into the blood, and afterwards, in its passage, are laid up in the Brain: So, by reason that the spleen, womb, and other Inwards, being evilly affected, Convulsive Diseases are excited, which notwithstanding, depend more immediatly upon the Brain, receiving the corruption of those parts, through the commerce of the Blood.

And also of the brain receiving it.

2. But in the second place, the Blood however vitious it should be, and impregnated with the morbid seed, it could not easily leave its Infection on the head, unless there were some fault in the Constitution of the brain, and its Appendix; as long as these parts are well made, and are full of vigour, they defend themselves, and what belongs to them, and the doors being shut, they admit nothing but an unmixt spirituous Liquour, destinated for their use: but if either the passages, and pores of the Brain are too lax, or the door-keeping Spirits leave or are called off from their watches, an heterogeneous and morsific matter, creeps in together with the nervous juice, and unfolds its malignity, in the animal government. As to the evil disposition of the Brain it self, it is sometimes hereditary: So those sprung from parents obnoxious to the Epilepsie, or Convulsions, are themselves for the most part prone to the same Distempers: and indeed, the Constitution of the brain, may several ways become vitious from the birth: for either its temperature is more moist, or more dry than it should be, or it may be faulty by the excess, or defect of either Quallity. Sometimes the pores are more lax, or its consistency is too soft, or too hard: and also the Conformation of the parts of the Brain, and its Appendix, may be after an undue manner; But sometimes, the disposition of the Brain and Nerves, originally whole, and firm, is vitiated by accident, and acquires a morbid inclination: long Intemperance may enervate these parts: as also malignant feavours, and chronical Diseases, very much debillitate them: besides outward accidents, as the excess of heat or cold, an ulcer or a blow oftentimes perverts their Crases, and renders them more incident

The evil disposition of the brain is either hereditary

Or acquired.

dent to the impressions of Diseases. But as to the Constitution or irregularities of the animal Spirits, by reason of which, the heterogeneous and Spasmodick particles, enter the brain without any repulse, and more easily cleave to it; it is to be observed, that the animal Spirits are in some more tender, and easily dissipable, from their very birth; so that indeed, they are not able to suffer any thing very strong or vehement, to be brought to the sense or Imagination, but strait they fly into confusions: For this Reason, women more than men, and some of them more then others, are obnoxious to the passions called Histerick. Further, sometimes a violent Passion, impresses on the spirits, though moderatly firm, this kind of dissipation and inordination, so that afterwards they are able to suffer nothing strongly, or to resist any injurie: So it often happens, that morbid impressions are affixed on the animal *regimen*, by sudden fear, or great sadness, which can hardly ever after be blotted out: for from hence women often contract first the Diseases named the *Mother*, or from the *Womb*, and men the *hypochondriack*, and are for the most part still subject to them.

2. How the morbific matter being admitted within the head is disposed.

From these things it appears, after what manner, and for what Causes, the Spasmodick Matter is wont to be admitted into the Head: now let us see next, what is done with it afterwards; if that this matter brought to the Brain, induces the Convulsive distempers, either not always, or not altogether, after the same manner.

Sometimes it is carried back again from the brain.

1. It sometimes happens, that the heterogeneons and explosive Particles, are admitted into the Brain, which notwithstanding are again exterminated, without any great hurt, and before they enter into the nervous stock: for that the veins and Lympheducts, or water-carrying Vessells, often sup up what is superfluous, and an enemy to the animall dominion, and convey it forth of doors, or dispose of it into Emunctuaries, or Sinks. Whilst such a matter is for a little while agitated in the brain, its particles being affixed to some of its Spirits, and at length striking against them, cause the *Virtego*, and the swimming in the head; but because they enter not into the passages of the nerves, Spasmodick Distempers do not follow.

Sometimes it is thrust out into the nervous stock.

2. When the morbifick matter is admitted within the Head, and not presently from thence sent back, oftentimes it produces not its evill, till it is inserted into the stock of the Nerves; for the animal Spirits within the Brain, being as yet strong, and having got a more free space, they evade the embraces of every heterogeneous *Copula*; which indeed they are not able to do, within the strait channells of the nerves: Besides, the morbifick matter it self, if it cannot be sent away out of the Brain by the excretory vessells, it is by and by sent forth to the System of the nerves as the more ignoble part: but if in spite of the force of the superiour faculties, such a matter stays long within the brain, it much infects the Spirits that inhabit it, and induces the *Epilepsie*, as shall be more particularly shewed hereafter: but more often, the hurtfull matter is thrown on the nervous stock, from the brain, without much harm to it, but this happens to come to pass, not always after the same way.

Remaining in the brain causes the falling-sickness.

The spasmodic matter being fallen on the nervous stock.

For truly, the heterogeneous Particles, being mixed with the nervous Liquor, and fallen towards the beginings of the Nerves, do not indifferently enter all of them together, or these, or those, as chance shall guide them, but they are directed to the passages of some before others, and that not without some Reason. For we observe, that the Convulsive Symptoms, do choose for the most part one place in children, another in riper years, and a different one in more tender, than in the more rebust.

Afflict the foreparts of the Nerves in Children.

In children, who are not yet accustomed to the Affections of the Heart, and exercise of the outward members (whereby the morbifick cause may be further carried from the brain) the Spasmodick matter runs more often into those neareſt Nerves, *viz.* the third, fifth, and sixth pares; wherefore, their faces and mouths, and those parts, are chiefly handled: and it is rare and unusual for them, to have their *viscera*, and *præcordia*, lifted up, or affected, with an inordinate motion, as in those of riper years: on the contrary, in men of more advanced years, by its approach to the intercostals, and the Nerves of the wandring pare, it being more open to those of the spinal marrow, which those nerves respect are wont to be more frequently pulled: but yet with this difference, that in the more tender, and those who are very delicate, and subject to passions, and who by reason of

Otherwise in those of riper years.

the

the passions of the minde, have very often their *præcordia* and *viscera* disturbed, the Spasmodick matter, more readily enters the more open passages of the interiour Nerves, and therefore, they are rendred more obnoxious to Spasmes, stirred up in the *Abdomen* and the *Thorax*: for hence it is that women are molested with the passions called Hysterical, and some men with the *hypocondriack*; as shall be more largely declared hereafter, when we come to treat particularly of these Distempers.

After what manner it disturbs the spirits, whilst it stays near the beginnings of the Nerves, or being fallen more deeply into their passages.

When the Spasmodic matter falls upon the heads of some nerves, or remaining there, it creates only a giddiness, and lighter *Spasmes*, and leapings of those parts, to which these Nerves belong, or being slidden more deeply into the pipes of the Nerves it brings forth more cruel Convulsive Paroxisms: but the same being dilated, into the nervous processes is disposed through one or more of the branches of the stock, or Trunk, sometimes all, and sometimes only those more open than the rest, and by degrees cleave to the Spirits, both within those Nerves, as also to those planted within the hanging *Fibres*: so that it is after the same manner, and there is the like preparation in the disposition to Convulsive *Paroxisms*, as if grains of Gunpowder were laid in a long train to be fired successively: The Spirits after this manner imbred with an heterogeneous *Copula*, are lodged within the *Fibres*, interwoven with the membranes, and Muscles, but chiefly within the nervous foldings; and when they grieved with too great plentitude, or troubled on any other occasion, are compelled to shake off their *Copula*, the particles striking and leaping one against another, hugely blow up the containing parts; and so excite a motive force, contrary to the commands and Laws of the Appetite, and Nature: Besides, the Spirits once stirred up, to the performing Convulsive motions, begin their explosions, from the one or the other extremity, of the nervous System, but for the most part at the end. But they who are first exploded, snatch or take with them their neighbours, also prædisposed, like a fiery train; and so they propagate the begun affection, with a long, continued *series* of Spasms, from one end to the other: For a convulsion begun in the bottom of the belly, or at the foot, or hand, creeps by degrees to the upper parts, and for the most part to the head it self: and the same Distemper, when it begins in the brain, (as in the Epilepsie) is derived in like manner thence downwards, to the remote Viscera, and also to the exteriour members and Limbs.

The spirits enter into explosions, by reason of plenitude or irritation.

The Spasmodic matter causes Convulsions either continued or periodical or by fits.

The morbifick matter, flowing in the heads of the nerves, produces divers kinds of convulsions, according to their various plenty and dispensation; for first of all, it is to be observed, that the whole passages of the nervous System, or of some of its parts, through the abundant, and exuberant matter, are sometimes possessed, so that the animal Spirits, both flowing in, and there implanted, being full of an heterogeneous *Copula*, and a perpetual supplement of it, are urged into continual Spasms. I have known some, who have had all the muscles and tendons through their whole body, afflicted with Contractions and leapings without intermission: I have known others whose thighs, arms, and other members, were perpetually forced into various bendings, and distortions: and also others I have seen, who of necessity were compelled to leap and run up and down, and to beat the ground with their feet, and hands; and if they did it not, they fell into cruel Convulsions of the *Viscera* and *Præcordia*: 2. If the explosive and heterogeneous Particles, be combined with the Spirits in a lesser plenty, they stick to them without tumult or perturbation, untill after some time, both Particles leaping again one from another, and from their striking one another, raise up Convulsive paroxysms; which sort of Paroxysms are periodical, and are repeated exactly at certain hours; which happens by reason of the morbifick matters, being dayly poured upon the nervous stock, with an equal dimension, and therefore about the same space of time, it is also dayly heaped up to an explosive plenitude; or they are wandring, and uncertain, in others, for that the heterogeneous particles, are poured in with a lesser company, and so arise not to an explosive fullness, under a long time; when in the mean time, the more full heaping of them together, and their explosion, are wont to happen sometimes more often, and sometimes more seldom, by reason of several occasions, or evident causes: hence it comes to pass, that the Spasmodic Distemper is sometimes altogether attributed to the evident cause, when indeed, if a more remote convulsive cause had not gone before, such a cause had stir'd up none.

Therefore,

Therefore, that we may ſay ſomething of the evident cauſes of Convuſions, we have already obſerv'd, if they be more vehement, and happen to a weak and tender conſtitution of Brain, and nervous ſtock, they are ſometimes ſolitary, or of themſelves cauſe convulſive paſſions: but as often as the Spaſmodick Diſtemper is heavier, and being made habitual is wont to return oftener, though the evident Cauſe be manifeſt, and bears the blame of the effect, nevertheleſs it is to be ſuſpected, that a procatartick, or more remote cauſe exiſts, and is the more ſtrong efficient, though it lies hid within: for unleſs the Spirits are imbued with an heterogeneous *Copula*, they would not be ſo eaſily, nor ſo often, driven into involuntary, and præternatural Exploſions.

The Evident cauſes of Spaſms.

We meet with a double order or *Claſſes* of Evident cauſes; for either they are of that ſort which increaſes the procatarick or more remote, and brings it ſooner to an exploſive fullneſs, as are an ill manner of living, and errors in the ſix *non*-naturals, which by infecting the blood, and nervous juice, heap up to a Saturity, in greater plenty, on the Spirits heterogeneous particles, and by that means do the ſooner procure Spaſmodick acceſſions. Or 2dly, the evident cauſe is ſaid to be, whatever ſtirs and irritates ſuddenly the ſpirits, that they preſently fall into exploſions, and whatever it be, that cauſes them to ſtrike off their *Copula*, and of this ſort there are very many accidents, that provoke the ſpirits, planted now within the Head, and now within the nervous Syſtem, to convulſive motions by a divers inſtinct (as is wont in the regular motions) which motions are either direct, or reflected.

The Evident Cauſe twofold viz. Filling and Irritateing.

The irritateing Cauſe, ſtirs up Spaſms, direct, or reflected.

1. Of the former kinde chiefly are violent perturbations of the minde, wherewith the ſpirits of the brain being agitated and confuſed, they excite others lying within the nervous ſtock, and often prædiſpoſed, to irregular exploſions, ſo a vehement fear, anger, or ſadneſs, do not only introduce epileptical and hyſterical fits, to thoſe that are diſturbed in their health, bnt ſometimes cauſe to divers others, palpitation, and trembling of the heart, and alſo horrid convulſions of the members and Limbs. 2. As to the other kinde of evident cauſe, to wit, whereby Spaſms are excited by a reflected Act, this indeed comes to paſs not unfrequently, as often as any heavy trouble, with an irritation of the *fibres* and ſpirits, happens any where to the nervous ſtock: for that this trouble being by and by communicated, to the chief fountains of the Spirits, to wit, the brain or Cerebell, from thence inordinate and violent motions, againſt the will of the minde, that is convulſive, being begun, they are returned back, for ſo either worms, phyſick, or ſharp humours, cruelly hauling the coats of the Inteſtines, cauſe ſpaſms in thoſe parts, and not ſeldom in the outward members.

So much for the ſeveral kindes of cauſes, the conjunct, procatartick, and evident, whereby convulſive Diſeaſes, becoming habitual, and are wont to be repeated with more grievous Paroxiſms, do ariſe: But as we have aſſigned another ſpecies of this Diſeaſe, where the Paroxyſms depend on an evident ſolitary cauſe, or at moſt only from irritation, the Spirits being not yet præoccupied with an exploſive *Copula*: it is now next to be inquired into, by what, and how many ways, this may come to paſs. Concerning this in general, it is affirmed, that the Spaſmodic fits produced by mere irritation are either lighter and quickly paſſing away, or more grievious and not ſeldom deadly, as when poyſon is taken, or when they come upon an overpurging medicine. Moreover it is noted, when the morbifick, or irritative matter falls upon the tales themſelves, or the foldings of the nerves, that it alſo not rarely becomes exploſive, and ſo Spaſms produced alſo from mere irritation (as we have already noted) are certain exploſions; theſe being thus premiſed, we will diſpatch the buſineſs in hand.

The irritateing Cauſe diſtinguiſhed, as to the places affected, as to the ſubjects.

The irritation of the Nervous parts, which is wont to cauſe convulſive motions, happens in various places, and from various matters, which are incongruous and inimical to the ſpirits, and *fibres*. As to the things, enemies to the Nature of the ſpirits, you may obſerve, beſides poyſons, and the exceſs of cangible qualities, which are inflicted from without; many things which are begot within us, viz. the various recrements of the blood, and nervous juice, feveriſh taints, præternatural ſalt, or ſulphureous humours, yea worms, the ſtone, with many other things, to be infeſtous to the nervous ſtock, and ordinarily to ſtir up Spaſmodick irritations. As to the places affected, or the ſeat of the irritative matter, although this brings hurt in any part of the nervous Syſtem, yet for the moſt part, it is

The places affected, are the beginnings the extremities, and the middle proceſſes, and foldings, of the Nerves.

wont to become moſt infeſtous, when it is fixed near the beginnings, or the ends of the nervous Syſtem, or about the middle proceſſes of the Nerves, and eſpecially in their foldings: Beſides, ſuch a matter, which irritating the Spirits, is wont to have the place of an Evident Cauſe, doth not ſeldome become, as we hinted but now, the means of a more remote cauſe, foraſmuch as the heterogeneous particles, being ſent from it, enter into the nervous *fibres*, and being combined with the Spirits, renders them more apt and ready to be exploded.

How the irritating Cauſe affects the origine of the Nerves.

1. Therefore, it ſometimes happens, that malignant humours, and infeſtous to the nervous ſtock, being poured out from the blood, on the region of the brain, and from thence dilated to the hinder region of the Head, do fall upon the *origine* of the nerves; where, if the little skin, which cloathes the oblong pith, be broken, they fall into the naked trunks of the nerves, and enter deeply into their *fibres*; wherefore indeed, *Convulſive motions* ariſe, not only in the neighbouring parts of the head, but ſometimes in very remote, and not rarely in the whole nervous Syſtem: This is generally obſerv'd, in evill *Criſes* of feavours, the morbifick matter being tranſlated to the head; alſo in cephallic Diſtempers, being brought to the worſt and deadly ſtate. Truly, when I have opened the heads of thoſe, who have dyed by this means, I found in all of them, the hinder Region of the oblong pith, immers'd with a ſharp, and ſalt *Serum*.

How the extremities of the Nerves.

2. As the interiour extremity, or original of the Syſtem, ſo not rarely the exterior, or the end, from a vellication or hawling there made, begets Spaſms, or Convulſive motions, and transfers them on every ſide: that this is done ordinarily in the outward members, the prickings of the tendons, and Nerves, do teſtifie. No leſs are Spaſms wont to be excited every way about, from a vellication or pulling, made in the *Viſcera*, when at any time Medicines, or ſharp humours, alſo worms lying in the Ventricle or Inteſtines, pull the membraneous part, and ſo impreſs a troubleſome ſenſe on the chief ſenſories; preſently from thence, by reaſon of the firing of the ſpirits, *Convulſive motions* torment now the affected parts, and now indifferently any other parts: for oftentimes Spaſms, from the more grievous hurt of ſome Inwards, do not only imploy the affected parts, and their neighbours, but alſo the Muſcles of the face and mouth, and are likewiſe transfer'd to the exterior members. The ſtone impacted in the Uriters, cauſes not only cruel Contractions in that paſſage, but in all its neighbourhood. Moreover, ſome hyſteric and other hypochondriac Symtoms, are ſometimes induced by this means, foraſmuch, as by a vellication made in the membranes of ſome *Viſcera*, thence the Spaſm is returned back.

How the middle proceſſes and foldings.

3. The irritative matter, which is wont to be the Evident Cauſe of Spaſms, ſometimes occupies the middle proceſſes of the nerves; and therefore the parts, ſometimes above, ſometimes beneath its ſeat, are incited to convulſive motions: This appears plain enough in the foldings of the Nerves; for when the ſharp recrements of the nervous juice, are laid up in them, they do not rarely create Spaſms, through the whole neighbourhood: by this means, the Collick or Hiſterick Diſtemper, is often ſeen to be begot or excited, there being no fault in thoſe Inwards, only from the humours, depoſited in the foldings of the meſenterie, as we will ſhew hereafter, when we come to treat of thoſe particular Diſtempers. In like manner, by reaſon that the ganglioform foldings, being ſtopped up with a ſharp and irritative humour, perſocation or choaking in the Throat, and various Contractions of the *Præcordia* are cauſed. Beſides, Spaſmodick Diſtempers do not ſeldom depend, upon a ſharp humour within the whole trunks of the nerves, and filling the paſſages of the nervous Bodys. We have ſeen ſome troubled with admirable, and perpetual Convulſions, ſo that they have been forced (as we have already mentioned) to run about, to leap, to fling about, and diſtort their members, to ſtrike the ground with their feet and hands, and to exerciſe other ſtrange geſtures, even as if they had been bewitch'd; the genuine Cauſe of which kinde of paſſion, ſeems to conſiſt in this, that the Juice watering the nervous ſtock, being moſt ſharp like ſtygian water, and being become degenerate from its due *Craſis*, doth irritate continually, and as it were poſſeſs with a certain madneſs, the Spirits therein flowing, and implanted.

The difference of Spaſms in reſpect of their origine.

From theſe things, which we have diſcourſed, about the various cauſes of Convulſions, their manyfold *Species* and differences are made manifeſt: For firſt, we have made known, that Spaſmodick Paſſions are moſt often derived, in reſpect of their

their *origine*, for the head, being affected; or the morbific matter, flowing into the beginnings of the Nerves: yet sometimes, though more rarely, they depend upon such a matter, Creeping into the extremities of the nerves.

2. As to the production of the Disease and symptoms, we observe the same sometimes to be produced, from a solitary evident Cause, as a sudden and vehement Passion: but indeed more often, to require a more remote, or procatartic cause, or prævious dispostion: moreover, the causes sometimes so to interfeer, that the procatartick, also may supply the place of the evident cause; and also, on the contrary, that this may serve in the place of the other. *Of their Causes*

3. As to the extention of the Disease, the Convulsive Distemper may be distinguished into *Universal*, because the Spirits actuating the whole nervous System almost, and the *Encephalon* it self, are successively exploded; and *Particular*, in which the Spirits, within some private Region of the Animal Kingome, are disturbed.

1. The former is meant, when the animal Spirits are irritated, within their first fountains, to wit, the pith of the brain, and cerebell, from whence their violent explosions happen; wherefore every internal function of the soul, to wit, the sense and Imagination is obscured, and its exterior locomotive faculty perverted: This kind of universal Spasmodick Distemper, in which, besides the spasms of the Limbs and *Viscera*, the interior powers of the Soul suffer an Ecclipse, is again twofold: to wit, either primarie, which begins at the Head, and arises, forasmuch as the Spirits inhabiting that place, being imbued with nitro-sulphureous particles, are first exploded, and their inkindling snatches or takes hold of the rest, flowing in both the medulary and nervous *Appendix*, and there stirs up Convulsive explosions, as may be discerned in the Epilepsie. *Of the extent of the disease.*

2. Or this universal passion, causing Insensibility is Secondary, to wit, which being begun somewhere in the nervous stock, from thence, plenty of spirits being successively affected, becoming like the undulation or moving of waters, is at length carried to the head it self: this often happens in paroxisms called hysterical, in which, by reason of the Spasm begun at first in the bottom of the belly, or some intumescency or rising up in the *Abdomen*, then, the same spreading higher, with the same effect, through the pipes of the Nerves, the Ventricle, and by and by the *Præcordia* are drawn together, and at length, the Spasm forceably rushing to the Head, the patients fall down, and all Knowledg is taken from them, and lastly, the Disease being reflected into other nerves, Convulsive motions of the exterior members succeed.

2. But as to the particular Spasm, in whose fit the sick continue well in minde, this Indeed is distinguished into various differences. As to the seat of the matter, which happens about the beginnings, extremities, or middle processes of the Nerves (as we have shswn) there arises a difference: For even as this morbifick matter, beseiging the beginnings of the nerves, is fixed about the head, middle, or end of the oblong pith, it therefore happeneth, that sometimes only the parts of the face or mouth, sometimes the *Viscera* of the lower, or middle Belly, and again sometimes chiefly the outward limbs, are hauled together.

Further, a Convulsion, as to the duration of the fit, and its magnitude, uses to be distinguished, into a continual, and Intermitting: The former, as we have already hinted, is called *Tenasmus*, or a permanent Contraction, as when one part, or more, being Contracted or distorted with a constant stretching, are detained for some time in the same præternatural posture; so, when the muscles, or a member, suppose the eye, Lipps, Cheeks, are distorted from their right position, nor cannot easily be presently reduced: the cause of which is sometimes a resolution, or Palsie, in some other muscles, which when they are loosened, the opposite do too strongly Act, and draw forceably the whole part, towards themselves, which ought to stand, as it were betwixt them, in an equall ballance: but sometimes, such a permanent contraction, is excited, by reason of the tendons being stopped with an impacted serous humour, which become for that cause stiff: This Kinde of Distemper becoms very familiar in the Scurvy, that the sick sometimes are not able to extend any member or Joynt, but they are contracted round like a globe. Sometimes the Tendons in the back by reason of such a course of humour, draw the bones out of their due scituation, and cause a gibbousness, or bending out of the Body. The *Tenasme* is wont to be distinguished into uni- *Of the duration of the Fit.*

verſal, of which there are three Kinds, to wit, *Tenſion* forward, *Tenſion* backwards, and *Tenaſmus* properly ſo called; and Peculiar or particular, which chiefly reſpects ſome certain member or joynt: we will ſpeak of theſe diſtinctly hereafter.

2. The intermitting Convulſion, is either ſhort and momentary, which is acted by frequent turns, and as it were by little leaps, as is to be obſerved in the quaking and ſhakings of the Tendons in horror, which are to be diſtinguiſhed between, with a frequent alternation of motion and reſt: or the leapings of the Spaſms, and their intervals, are drawn out longer: So it is uſual, for Convulſive paroxyſms, when they are repeated, to endure for ſome time, and to leave off again; but ſuch periods are now certain, or come to certain ſet hours, now rare, and incertain, and happen after a divers manner, and as various occaſions are given. There are other differences of this diſtemper, which will be better illuſtrated hereafter, when we ſhall ſpeak particularly of each kinde of Convulſions.

CHAPTER II.

Of the Epilepſie.

THus far we have treated, of the Nature, Cauſes, and differences of Spaſms, or Convulſions in general according to a clean, new, and unuſual *Hypotheſis*, but (as I think) agreable enough with Reaſon: our next buſineſs is, to explain particularly the chief kindes of that Diſtemper; amongſt which the *Epilepſie* eaſily deſerves the preheminence, and the Conſideration of it ought to proceed, by a certain right of method and order; for that this Diſeaſe, having as it were got a large Empire, in the humane body, exerciſes its Tyrranie, not only in the whole *Encephalon*, but for the moſt part, in all the parts of the nervous Siſtem at once: wherefore by the Ancients, it was called *Morbus Herculeus*, or the *Herculean Diſeaſe*, from the Cruelty of the diſtemper, and from the manner of the violent fits, as if ſent, as it were by ſome Divinity, being ſo amazing, *morbus Sacer*, or, the holy Diſeaſe, to which may be added, the Conjecture of a certain Divine of our own Country, of no ſmall note, to wit, that many, who were taken to be *Damonaicks*, or poſſeſſed with the devill in the New Teſtament, were only Epilepticks, and that they called the cure of this Diſeaſe by our Saviour Jeſus Chriſt, an ejection or exorciſm of the evill Spirit: In truth, in this Diſtemper, no marks at all, of the morbifick matter appears, or are ſo very obſcure, that we may have deſervedly ſuſpected it, to be an inſpiration of an evill Spirit, at leaſt it is probably, that as often as the Devill is permitted to afflict miſerable Mortals, with his deluſions, he is not able to draw more Cruel Arrows, from any other quiver, or to ſhew miracles by any better witch, than by the aſſaulrs of this monſtrous Diſeaſe.

As the Symptoms of the Epilepſie are very Stupendious, ſo their Cauſes, and the formal Reaſon of the Diſeaſe it ſelf, are moſt difficult to be unfolded. For indeed, the buſineſſe is variouſly controverted among authors, both concerning the part Affected, and alſo the manner of its being affected: many place its ſeat in the Brain, or its Ventricles, others in the meninges, or thin skins enwrapping the Brain, and ſome again in the middle, or loweſt belly, bnt by what right ſhall be inquired into anon: In the mean time, laying aſide the opinions of others, that the true ſpeculation of this Diſeaſe may be found out, by the clew af right reaſoning, we will firſt of all endeavour to give you its deſcription, together with the whole ſenſe of its *Phænomenas*. Secondly, theſe things being rightly weighed, to finde out the ſubject of the diieaſe, and its chiefly affected parts. Thirdly and laſtly, to add the means and manner. whereby this diſeaſe is begotten, with the true Cauſes of its Symtoms.

The deſcription of the Epilepſie, or the hiſtory of the Diſeaſe.

In the firſt place, As to the Idea of the Diſeaſe, the Epileptick Fit or aſſault, ſeems to be only an univerſal, and more cruel Convulſion, to wit, in which the Spirits inhabiting the Brain, being firſt irregularly moved, and as it were confuſed, all the reſt, dwelling in both the medulary, and nervous appendix of the *Encephalon*,

eephalon, begin at once Convulſive motions, or inordinate contractions, and continue them for ſome ſpace, with frequent leapings or palpitations: The acceſſion of the diſeaſe come upon them at unawares, and oppreſſes the ſick, not the leaſt thinking of it, and in the twink of an Eye, caſts them on the ground, deprived of ſenſe and underſtanding; for that they do not only fall, but are flung down with a certain force, ſo that oft times the part firſt ſtriken againſt the Earth, or other adjacent Bodies, is hurt with a bruiſe or wound; being laſt done, there comes upon them a gnaſhing of Teeth, with a foam at the mouth alſo, oftentimes the ſhaking of the head, and a frequent knocking it againſt the ground, the armes and thighs, yea, the hinder part of the neck, and back, either become preſently ſlit, or elſe they are diſtorted hither and thither, with various bendings; ſome Cruelly beat their breaſts, others ſtrongly thruſt out their armes and thighs, and fling them, and ſometimes the whole Body, impetuouſly here and there; many have their *præcordia*, and *hypochondria*, and alſo all their lower belly ſwelled, and blown up very much: after ſome time, ſometimes ſhorter, ſometimes longer, theſe Symptoms, the Tragedy being as it were acted, ceaſe, on a ſudden, and then the ſick come to themſelves, and recover their ſenſes: but after the fit there remains an akeing in the head, with a dulneſs, and hebitude of the ſenſes, and not ſeldom a turning, or giddineſs.

The *Epileptick Paroxyſms* are wont to return ſometimes at ſet times of the day, moneth, or year; and moſt Commonly at the greater returns of the year or Tropicks, or at the oppoſite aſpects, or conjunctions of the Sun, or moon, they are wont more certainly to return, and to afflict more grievouſly: ſometimes their comings or acceſſions, are uncertain, and wandring according to the occaſion, and variety of Evident Cauſes: there are alſo Fits or Poroxyſms, now more light, which quickly paſſe away, ſo that the ſick are ſcarce thrown to the ground, nor are carried into diſorder or inſenſibility; now more grievous, whereby they when taken, lye ſenſeleſſe the ſpace of an hour or more, and are tormented with horrid Symptoms, as if poſſeſſed with the Devil: Sometimes tho more rarely, ſome foregoing ſignes of the fit, warn them of their falling into it; as an heavineſſe of the head, a brightneſs of the eyes, a tingling of the eares: ſometimes a ſpaſm or cramp proceeds, in ſome exterior part, as in the arm, or thigh, or elſe in the back, or *Hypochondria*, which aſcending from thence, like a Cold air, and creeping towards the head, ſeems to bring on their falling down. Boys, and young Men are found to be more obnoxious to this diſeaſe, than old men, or men of mature age: who ever are once ſtruct down by its fit, unleſs they be cured by the help of Medicines, they will hardly be altogether free, from the infection of it, all their Life after; the more often the Fits are, the more grievous they become, which as they frequently return become more cruel, and enervate the uſe of the memory, Imagination, and Reaſon, and then the ſtrength, and force of the whole animal function, until its Occonomy being greatly perverted, the vital fuuction at length decays, and by degrees is aboliſhed. The weapons, and wicked preparation of this Diſeaſe, being after this mauner layd open, we will next make an inquiry, in what part it fixes its ſeat; or what is its next ſubject.

The ſubject or the ſeat of the Diſeaſe is inquired into.

The acceſſion of the Epilepſie, and the manner of invaſion, ſeem plainly to declare, that its primary ſeat, ot part chiefly affected, is contained ſomewhere within the Head; but that a Paroxyſm ſometimes begins in the remote parts, and from thence aſcends towards the head, which indeed ſeems only to be ſo, and happens by accident, when in the mean time, the morficick Cauſe ſubſiſts about the *Encephalon* it ſelf, (as ſhall be anon declared): but that from the firſt aſſault of the Diſeaſe, preſently a ſtrange Inſenſibility, and diſorder, with contractions almoſt of all the Members and *Viſcera* ſucceeds, it is a manifeſt ſigne, that the whole joynting of the *Encephalon*, and the original of all the nerves, are poſſeſſed with the morbifick Cauſe: But truly, although it ſeem moſt difficult, to unfold where this cauſe, or morbifiek matter ſubſiſts chiefly; for, neither is it probable, that the ſame is diffuſed thorow all the parts of the Brain; yet it neither appears in what ſingular place this being fixed ſhould draw all the other parts ſo ſuddenly into a Conſent of its evill.

Some affirm it the Meninges or thin skins of the Brain, other the pith or middle part of the Brain.

Among the various opinions of Authors, about this matter, there are two that ſeem more probable than the reſt, and challenge an aſſent with an equall likelineſſe to Truth. One of which aſſerts the very middle of the brain, and the other

the meninges, or the thin skins encompaſſing or cloathing it, to be the primary ſeat of the Epilepſie: The Reaſon of the former is founded in this, that where the fountain of the animal Spirits, and the original of the ſenſitive ſoul it ſelf conſiſts, there ought to be placed the cauſe of this Diſeaſe, certainly when the chief faculties are firſt hurt, all the reſt eaſily participate of the ſame evil: But in truth, though I may grant in the Apoplexy, and the *deliquium* or fainting of the ſpirits, that it is ſo, yet it follows not in a Convulſion (of which kinde of diſtemper the *Epilepſie* is) that all the *fibres* and nerves ſhould be pulled together, becauſe the middle part of the brain is firſt pulled: for that this, as it is a moiſt and fluid ſubſtance, and wanting of ſenſe and motion, ſeems not capable of contraction, or the Spaſmodick Diſtemper: wherefore others thinking the brain, and every part of it, free from the blame of this Diſeaſe, caſt it altogether on the meninges: affirming, that the membranes, cloathing the brain, and chiefly their proceſſes, ſpread upon the clefts of the brain, and *Ceribel*, as they are hauled by the morbifick matter, do conceive or beget Spaſms, or horrid Convulſions, and then that from the Meninges themſelves, ſo Contracted and brought together, the incluſed Brain is greatly compreſſed, and bound together, ſo that its pores and paſſages being bonnd up, the great amazing diſorder and inſenſibility is induced, and alſo the trunks of the nerves, to which either meninge or skin is faſtened, being brought into a conſent with them, enter alſo into Convulſive motions: And indeed after this manner, the formal Reaſon of the Epilepſie, may perhaps ſeem to be unfolded; but truly when I conſider further of the matter, I think we may differ from this opinion, becauſe it does not appear by what Courſe, or for what cauſe, the falling down being at hand, theſe meninges ſhould beget ſuch horrid Spaſms. Nay, it neither appears, how from them, however Convulſive they be, the Epileptick Paroxiſm ſhould be induced.

It is affirmed, that the meninges are not firſt of all affected.

As to the former, it ſeems an impoſſible thing, for the meninges to be ſo contracted, as to their whole Concavities, that being bound more ſtrictly together, like a purſe, they ſhould on every ſide pull together their contents, and draw them into a narrower ſpace: for that the *Dura Mater* ſticks moſt firmly to very many places of the skull, yea, and the *Pia mater* is tyed to it, near the proceſſes of the hollow turnings, by a mutual knitting of the membranes, and every where beſides with a Continuity of Veſſells: Hence it eaſily appears, either that membrane, as to the greateſt part of it, is immovable, ſo that they cannot fall into ſo univerſal Spaſms: but in reſpect of leſſer Spaſms, as when a certain portion of this or that meninge, or both together, is pulled, indeed we grant ſuch may happen: for I have often heard thoſe troubled with great headach, to complain extreamly of a great conſtriction of the parts, lying under the ſide of the skull, ſometimes on the right, ſometimes on the left, and yet from thence no aſſault of falling down, has followed: Further as thoſe membranes being notably hurt, do cauſe great vellications or haulings, yet upon it there is not wont to be an Epileptick fit to follow: for I have known, from an Impoſthume in the *Dura mater*, when being broken, and that the ſtinking matter had knawn the more tender meninges, and ſhell of the Brain, that the ſick have fallen firſt into an amazedneſſe, and at length into a deadly Apoplexie, who notwithſtanding, in the whole courſe of the Diſeaſe, was free from any Epileptical Symtom. Alſo I remember, I have ſeen one, who had the *Dura mater* very much torn, by the inſtrument of an unskilfull Surgion, and another, that by a wound, had that with part of his skull taken away, ſo that a portion of the Brain ſwelled forth, and yet to neither of them any Epilectical paſſion hapned: wherefore neither is it likely, that the blood, or humors, or (if any ſhall ſo argue) the vapours, compacted within thoſe meninges, can bring in any greater evill, than either a ſtroke, or wound, inflicted on them, or filthy matter there poured out: Beſides, thoſe who are more lightly troubled with the *Epilepſie*, ſo that they ſcarce fall down, and have their minds free through the whole aſſault of the diſeaſe, would perceive the membrans to be ſo contracted, and the globe of the brain to be more ſtraitly thruſt together, if there had bin any ſuch kinde of affection; but they on the contrary, ſeem to have the Brain as it were inflamed, and to be ſenſible, that the ſpirits leap forth, and are as it were exploſed, with a certain fierceneſs.

The ſpirits inhabiting the middle of the brain are the primary Subject of the diſeaſe.

And indeed, I think it is very likely ſo, that the Epileptick Paroxiſm is ſtired up, from a certain ſuddain rarefication, and exploſion of the animal ſpirits, inhabiting

biting the Brain, which are in truth the first, and immediate subject of this Disease; to wit, whereby the Brain it self is inflated, and rendered so insensible, and the Nerves hanging thereto, also put into convulsions: For hence it comes to pass, that the accession of this Disease begins so on a sudden, and determines perfectly without any great provision or remains, of the morbifick matter; because the Infection is not brought so much to the solid parts, as to the Spirits themselves.

We have already shown by what means, the heterogeneous and explosive *Copula*, consisting as it seems of *nitro-Sulphurous* particles, cleaving to the spirituous particles of the animal Spirits, and lastly, being smitten and explosed by them, by reason of plenitude or irritation, produces Convulsive Symptoms: But although this kinde of Spasmodick *Copula*, is first distilled from the blood into the brain, yet, for the most part, it does not take hold of the spirits there, or at least, it stays not long with them, in that place: but rather, being thrust from thence, towards the nervous *Appendix*, causes particular and respective Spasms, near the places affected: But sometimes, if the Spasmodic matter be more plentifull and strong, and the constitution of the brain weak, the heterogeneous *Copula*, being fixed to the Spirits, not only in the nervous stock, but also to those planted within the *Encephalon* it self, causes the Epilectick disposition; and the explosive particles of the Spirits, and this *Copula* knocking one against another, stir up the falling sit. For indeed, since the assault of the *Epilepsie* urging, the Insensibility, and great disorder is for the most part the first Symptom, and all the pathognomick, it may be concluded, that the animal Spirits, lying within the middle of the brain it self, are affected before others; and that therefore, that part, is the principal seat of the Disease: Then, forasmuch as the falling of the sick, or casting to the ground, and spasms of the members and *Viscera*, most often follow that Insensibility great disorder, or leaping forth, of the spirits, it follows that the animal Spirits also inhabiting the nervous System, are imbrued with the same explosive *Copula*, and are drawn into consent with those inhabiting the brain it self, and are excited by them, to explosions purely inordinate; although sometimes (by the whole *series* of Spirits, planted both in the brain and nervous stock, being like a long train of gunpowder, prædisposed to explosions) an exterior Spasm, beginning a great way off, perhaps in some member or Inward, may afterwards be carried to the Brain, as shall be more fully shown hereafter. In the mean time, it is concluded, that the region of the Brain it self, is always the primary seat of this Disease; and that we ought to suppose, the conjunct cause of the Distemper, not to be water heaped up within the ventricles of the brain, nor a thick or clammy humour, impacted in the passages of its pores: for such Causes are begotten by degrees, and therefore would shew some certain signes before-hand, of the first coming upon one; further, the assault of the fit being over, such a matter could not be wholly discussed in so short a time, but that from its reliques, some impediments of the animal function would remain, which indeed rarely happens in the Epilepsie, unless inveterate: but, for the exciting of the falling down, no less can be imagined, then that the animal Spirits, which flowing within the marrowie substance of the brain, perform the acts of the interior sense, of the Imagination, and appetite, having gotten an heterogeneous *Copula*, should be inordinately exploded, and so they being disturbed beyond their orders and stations, the Superior faculties of the animal regimen, must suffer an eclipse; then, from this greater explosion of spirits, as it were from a fiery enkindling, other Spirits, inhabiting the marrowy and nervous appendix, being also prædisposed to explosions, conceive the like disorder, and in like manner, cause the explosive Convulsive motions, of the containing Bodys.

For although we conclude, that the middle of the brain, is always the primary seat of the Epilepsie, and that from the beginning, the morbific matter is layd up wholly in that Region; yet the distemper growing grievous, this being more plentifully spread thorow the head, enlarges its bounds, so that it being strowed here and there, and far and neer stretched out, Spasmodic particles, are cast into the rest of the Brain, and also into the nervous *appendix*, like gunpowder or explosive seed, whereby it comes to passe, that at the first approach of that disorder of Spirits, Convulsions follow, sometimes in these, sometimes in those parts, and not rarely thorow the whole Body.

The disease affects secondarily very many parts, of the Nervous System.

CHAP.

CHAPTER III.

The Differences of the Epilepſie, and the reaſons of ſome of the Symptoms are unfolded. Alſo its Curatory Method is repreſented.

THus far of the eſſence, and the Cauſes in generall of the Epilepſie, it ſhall be now our next task, to explicate the differences of this Diſeaſe, alſo the reaſons of ſome of the accidents, and Symptoms, belonging to it: to which we will laſtly add, Obſervations and Hiſtories of ſick people, with the method of Curing.

The moſt notable difference of the Epilepſie, is wont to be taken from the Subject, to wit, that the brain, or part of it, labouring with this diſeaſe, is either primarily, and Idiopathetically, or properly, affected, or ſecondarily, and not but by conſent, with other parts: concerning the former kinde, we have hitherto diſcourſed, as to the other, to wit, in which the falling down ſeems to ariſe, from ſome place without the head, and then lays hold of it ſecondarily, and as it were by a blaſt ſent from elſewhere; it is to be obſerv'd, that this kinde of diſtemper (as *Galen* hath noted) proceeds either from the external, or internal parts: we meet with many examples of Epilepticks, in whom the fit being juſt coming upon them, a ſpaſm is felt, with a numneſs in the hand or toe, or other particular member, which preſently from thence, as it were with a pricking or tingling, creeps towards the head, which when it hath attained, immediately the ſick party falls flat on the Earth, and is hurried into inſenſibility and diſorder of ſpirits, and other proper demonſtrations of the Symptom of the falling ſickneſs: neither is it a leſs uſuall *proæmium* of this diſeaſe, that there firſt ariſes as it were a conflict, in the ſtomach, ſpleen, womb, inteſtines, genitalls, or other inwards; or that ſome kinde of perturbation is raiſed in ſome of them; then from that place, the aſcent of (as it were) a cold air is perceived, to which diſtemper, follows the acceſſion of the falling evill, with its moſt horrid proviſion of ſymptoms: hence it was commonly believed, that the cauſe of the Epilepſie, lay hid in the part, ſeen to be ſo primarily affected, and propagated its evil to the brain, of its ſelf innocent.

The Reaſon of the Epilepſie which is ſaid to be excited by conſent.

But in very deed, as to this, we muſt ſay, that in every Epilepſie, not only the procatartick or remoter Cauſe, but alſo the conjunct, remains wholly in the Brain; to wit, that the ſpirits inhabiting it, being diſpoſed to exploſions, and there being exploſed, bring on or Cauſe every falling Evill. As to thoſe præliminary Symptoms in ſome Epileptical people, they ſometimes have the place of an Evident Cauſe, and ſometimes only of a ſigne: For when the evill diſpoſition of any inward, as the ſtomach, ſpleen, or womb, happens with the diſpoſition of the Epilepſie, as often as any perturbation is begun in that diſtempered Inward, it eaſily happens, by reaſon of a tranſmiſſion of the ferment from thence, or a continuation of the ſpaſm to the head, an Epileptical fit is excited in the Brain præ-diſpoſed to act.

The Conjunct Cauſe of the Epilepſie conſiſts only in the brain.

But theſe kind of ſymtoms of the fallingevil, which being ſuſcitated from without, ſeem to propagate the diſtemper to the Brain, do often ariſe from the conſent of the Brain it ſelf, and are only ſigns of the approach of the Epileptical Fit, or of the ſpirits beginning to be exploded, in the brain: For when the animal ſpirits planted in the middle parts of the Brain, and Cerebel, and alſo thoſe in the oblong pith or marrow, neer the beginnings of the Nerves, are ſo filled with an heterogeneous Copula, that, for the Caſting of it off, they are ready to bring on the aſſault of the Diſeaſe, before they are all exploded heap by heap, ſome ſpirits lying more outward, in ſome private Nerves, becauſe they are deſtitute of the wonted influx of their ſuperiors, fall into certain inordinations, and ſo begin ſpaſms, which ſpaſms (as it is often the manner in this kinde of diſtemper) begin at the extremities or ends of the Nerves, inſerted to this or that member, or Inward, from whence by degrees, they creep forward to their beginnings; whether being come forth with the ſpirits, thorow the whole *Encephalon*, before diſpoſed to exploſions, being

being moved by that ſpaſms, and ſo being ſnatch'd away with a fiery enkindling, are ſuddenly exploded or thurſt out; ſo they ſeem to ſtir up the Epileptick Fit, beginning at firſt from themſelves, as it were ſecondarily, and by inſtinct, brought from ſome other place. After this manner, ſometimes the Hiſterical paſſions, when beginning in the bottom of the belly, they are Communicated to the Brain, are thought to ariſe from thoſe Viſcera, and to be ſtirred up by their fault; when in the mean time, the morbific cauſe ſubſiſts chiefly, about the beginnings of the Nerves, as we have elſewhere ſignified, and ſhall again ſhow hereafter, when we come to treat particularly of the Spaſmodick diſtempers.

Other differences of the Epilepſie.

There yet remain other differences of the Falling ſickneſs, to wit, that it is either hæreditary, or acquired; again, either kind is variouſly diſtinguiſh'd, by reaſon of the Age, or time, in which it firſt comes upon one, to wit, when the firſt coming of it happens before, or about the puberty, or being of ripe age, or after it; further as to the Efficacy of the diſeaſe, into ſtrong, and weak, for as much as the Paroxyſms or fits, are with, or without the diſorder of ſpirits, and falling, as to its inordinate manner, whoſe aſſalts are wandring, and uncertain, moreover, it is wont to be diſtinguiſhed, accordiug to the peculiar ſymptoms, in theſe, or thoſe ſick people, by reaſon of ſome diſpoſition, or manifold Idioſyncraſy, or propriety, of the Temperament.

But from what has been ſaid before, of very many of the Symptoms, which are to be met with in this Diſeaſe, the cauſes do eaſily appear, ſo that there will be no need here, to conſider all of them: but of ſome of them, which ſeem more intricate, it will not be from the matter, to diſcourſe in this place.

Why Epileptick's fall down with violence.

We will therefore firſt of all inquire, why thoſe ſick of this Diſeaſe, do not fall as thoſe that are apoplectick, or have ſwounding fits, but are rather ſtricken down with violence, againſt the Earth, or any other bodys, that are by chance oppoſite to them, as if they were ſmitten down by ſome wicked Spirit, ſo that very often, ſome part of the head, or face, is hurt, with the violent fall: And thoſe ſo diſtempered, even like the Dæmonaicks in the Goſpel, are frequently flung into the fire, or the water: but it may be here declared, that the Epilepticks become obnoxious to theſe kinde of evills, for that the fit coming upon them, all knowledge or providence is taken from them; and further. the nerves neighbouring to the head, being ſtrongly contracted, the whole bulk of the Body is carried away headlong: but in the Syncope, and Apoplexie, the fall of the diſtemperd Body, ſeems as the ruines of a building, which happens, by reaſon that its props are taken away: but indeed in the falling Sickneſſe, it is no otherwiſe than if a houſe were overthrown, by the blowing up of Gunpowder, which is removed much from the place where it ſtood.

From whence the Foam at the mouth of theſe troubled with the falling ſickneſs comes.

2*ly*. It is commonly eſteemed a great pathognomick, or peculiar Symtom of the Epilepſie, if when the diſeaſed being fallen to the earth, and ſuffering moſt horrid Convulſions, there flows from the mouth, a ſpumous Spittle or foam, which indeed is thought to be preſſed from the Brain, being ſtrongly contracted, into the palate: But in truth, though it be granted, that this flux of ſpume be very often a ſigne of the falling Sickneſſe, yet it is not ſo appropriated to this diſeaſe, but that the ſame ſometimes happens in the Apoplexie, in deep ſleep, in hyſterical diſtempers, and other convulſive diſeaſes: Beſides, this kinde of Foam, does not deſcend from the Brain, for there is no paſſage open, by which it may paſs, but from the Lungs being inflated, and elevated even to the Larinx, or the top of the ſharp arterie, from whence ſpittle foams forth, with a certain fervency and ebullition: For the fit of the falling evill growing urgent, when moſt of the nerves in the whole Body are drawn together, thoſe alſo that ſerve for the motions of the Lungs, and Diaphragma, ſuffer moſt cruel convulſions, and lifting up all the præcordia upwards, continue them almoſt immovable, in a long Syſtole, ſo that the breathing, and pulſe, cannot be at all perceived: In the mean time, becauſe the blood ſtraitned within the boſom of the heart, diſtends it, and alſo almoſt choakes it; the Lungs however hindred, that they cannot be moved after their wonted and natural manner, perform what they can, with a thick and haſty agitation, whereby the blood may be drawn forth from the Heart; by which endeavour of theirs, the ſhaking aire, by the frequent or thick reſpiration, raiſes the viſcous or clammy humidity into froth, like the ſhaking of the white of an egg; by and by it lifts it upwards towards the Cavity of the mouth,

and ſo at laſt drives it out of doors: wherefore, a foam or ſpumous ſpittle does often ſucceed in other diſtempers, where the pneumonic or breathing nerves are either contracted, or are hindred from performing their Function.

Why ſome in the Falling knock their Breaſts,

3*ly*. Moreover, from the ſame reaſon it comes to paſſe, that ſome *E*pilepticks being fallen to the ground, beat moſt greviouſly their Breaſts with their Hands, and are hardly to be held from it: for when the Præcordia, being troubled with the Spaſm, and hindred that they cannot move themſelves, after their wonted manner, and the blood ſtagnating in them, not without a great oppreſſion of the heart, threatens a ſuffocation of Life; then it is that the ſick ſtrikes their Breaſt, to wit, that the præcordia ſo ſhaken, and as it were moved up and down, might renew their motions, and ſo the blood might be relieved from its ſtagnation, and the heart from its heavy oppreſſion: and this is done after the ſame manner, as when ſome that are ſleeping being tickled, or bit by a flea, unknown to themſelves, preſently rub, or ſcratch the affected place.

The prognoſtication of the Diſeaſe.

As to the Prognoſtication of the diſeaſe, we have already declared, that it is of very difficult Cure, which difficultly conſiſts in this, that the middle of the Brain (in which is the chief ſpring and fountain of the animal Spirits) is very much debilitated, not only by the morbifick cauſe, but alſo by its effects, to wit, the ſeveral fits; and its pores looſened, ſo that they ly open for the entrance of every heterogeneous matter: and ſo the morbid diſpoſition it ſelf being confirmed, by the repeated Paroxiſms, and taking deeper root, it is hardly taken away. But it is to be obſerv'd, that the Epilepſie ſometimes terminates of it ſelf, and is ſometimes overcome by the help of medicines: which happens about the age of puberty, and then only, ſo that, who are not cured, that time being elapſed, that is before the twenty fifth year of age, they ſcarce ever after recover their health, for about the time of ripe age, there is a twofold alteration of the humane *B*ody, and therefore, there often happens a Solution or looſing of the falling ſickneſſe, or of any other diſeaſe deeply rooted: For firſt, at that time, the genital humour begins to be heaped together in the ſpermatick Veſſells, from whence it follows, that the Spiritious particles, and what are wont to grow to them, nitro-ſulphureous and morbifick particles, are layd up, not only in the brain, but alſo in the teſticles: wherefore, if this heterogenious Copula of the Spirits, be more plentifully caryed to that new ſtorehouſe, from thence, the brain becoming free, often leaves the epileptical or otherways morbid diſpoſition. 2. About the time of ripe age, as the Blood pours forth ſomething before deſtinated for the brain, through the Spermatic Arteries, to the genitals, ſo alſo it receives as a recompenſe, a certain ferment from thoſe parts, through the veins: to wit, certain particles imbued with a ſeminal tincture, are caryed back into the bloody maſs, which makes it vigorous, and inſpire into it a new and lively virtue, wherefore at that time, the gifts both of the *B*ody and minde, chiefly ſhew themſelves; Hairs break out, the voyce becomes greater, the courſes of women flow, and other accidents happen, whereby it is plain, that both the blood and nervous Juce, are impregnated with a certain freſh ferment: wherefore, the morbific ferments or ſeeds, unleſſe they be overcome by this new natural firment, they afterwards continue untameable even to Death.

But that the Epilepſie is ſometimes cured by the help of medicines, Experience doth teſtifie: we ſhall anon diſcourſe of the method of healing, and ſhew the reaſons of the moſt famous medicines; in the mean time, as to what further belongs to the prognoſtication of this Diſeaſe, if it end not about the time of ripe age, neither can be driven away by the uſe of medicines, there happens yet a diverſe event in ſeveral ſick Patients, for it either ends immediatly in Death, or is changed into ſome other Diſeaſe, to wit, the Palſie, ſtupiditie, or melancholly, for the moſt part incureable.

The Epilepſie is changed into other Diſeaſes.

As to the former, whenas the fits are often repeated, and every time grow more cruell, the animal function is quickly debilitated; and from thence, by the taint, by degrees brought on the Spirits, and the Nerves ſerving the Præcordia, the vital function is by little and little enervated, till at length, the whole body languiſhing, and the pulſe being looſned, and at length ceaſing, at laſt the vital flame is extinguiſhed.

But that this Diſeaſe often ends in the Palſie, melancholly, or madneſſe, the reaſon is, becauſe the tone, and confirmation of the brain is depraved, by the often

ten exploſions of the animal Spirits, and at length its natural ſtate is ſo perverted, that, by the morbifick particles of another Kinde alſo admitted, the ſpirits are fixed, nor are any more exactly prone to exploſions, but rather ſometimes, by a contrary vice introduced, their Elaſtick virtue is too much wanting, ſo that they become dull and ſluggiſh beyond meaſure; even, as oftentimes the intemperature of the blood, being more cold than it ſhould be, admits the more intenſe burning of a feavour: and indeed, theſe depreſſions of the ſpirits happens partly by their own proper fault; for that their more agill particles being too much exploſed, the more dull or heavy are only left, and from them they are ſupplyed, but partly, as we have ſaid, they happen from the fault of the brain; for that its pores and paſſages, are ſo dilated and opened, from the often paroxiſms of this falling evill, that afterwards, there is an open paſſage made, for any heterogeneous, and divers kindes of morbifick particles, to enter with the Nervous juce.

Thus much for the Diagnoſis and Prognoſis, the deſcription and judgment of the Epilepſie, or falling ſickneſſe; in the unfolding of which, it was neceſſary to bring reaſons not altogether abſtruſe, and different from the common Pathologie, neither are we conſtrained to receade, in the Therapeatick or Curatory part of this Diſeaſe, from the common and uſuall method of curing, in other Diſtempers: But in truth, the preſcriptions of ſuch who follow the ordinarily received Opinions, by which, for the moſt part, they endeavour to carry away, and wholly to eradicate the morbific matter, by Catharticks only, do little or nothing avail in the falling ſickneſs, yea they are wont frequently to be hurtfull to it. I have known ſome famous Practitioners, omitting wholly the ſeries of the Curatory intentions, betake themſelves to certain Empirical Remedies, without any foreſight of the whole: this kind of practiſe, tho ſometimes it ſucceeds happily, would much more certainly perform the propoſed cure, if the Body being rightly prepared, they ſhould in like manner take away all Impediments, by other medicines. *Of the Curatory part of the Epilepſie.*

Wherefore, the Indications concerning the Cure of the Falling Sickneſſe, ſhall be (as they are Commonly ſet down) either Curatory, which have reſpect to the Fit, and drive it away either coming on, or when upon them, to ſet it going the ſooner: or prophylactic or preventory, which have reſpect to the Cauſe of the Diſeaſe, which if they can take away, its acceſſions will be inhibited afterwards.

A general evacuation has ſcarce any place in the former Intention, for in the fit neither a Vomit, or Purge, and very rarely the opening a veine, are wont to be adminiſtred; if the amazed Inſenſibility and diſorder continues very long, ſometimes a Clyſter is wont to be uſed, but what that chiefly aimes at is, to fix the too fierce and Volatil animal Spirits, and alſo to ſuppreſs their begun Exploſions: For which ends, two kinde of Remedies chiefly are made uſe of, to wit, Firſt, ſuch as repreſs the animal ſpirits, being too apt to grow fierce and to leap forth, and repell them with ſome perfume that is ingratefull to them, and Compell them into order: which thing indeed medicines imbued with a volatile, or armoniack ſalt, or alſo with a vitriolic ſulphur do effect, of which kinde are ſalt and oyle of Amber, Spirits of Blood, Harts-horn, Sut, tincture of Caſtor, and ſuch like: for theſe being inwardly taken, or put to the noſe, often times bring help, and the evill Spirits of this Diſeaſe, are thought to be driven away, even as in *Tobit*, the Devill was by the fume of the gall of a fiſh. Secondly, the animal ſpirits are call'd away, or hindred from their begun exploſions, when they are allured, or held buſied in ſome work, they are accuſtomed to: wherefore, the fit urging, frictions being uſed and for ſome time continued, thorow the whole body, do often help: But ſome that ſet upright the diſeaſed, and altogether hold or reſtrain their Arms and legs, from their Convulſive motion, or hold them violently in this or that poſture; that alſo blow things into their noſes to make them ſneeſe, and power down ſtrong Cordials at the mouth, and apply either Cupping glaſſes, and Scarrifications, and handle more ſharply with other manner of adminiſtrations thoſe ſick people, and diſturb the manner of the fit, I ſay this kinde of practiſe is moſt often too roughly inſtituted or ordained: becauſe after this manner, there is a double trouble put upon nature, to wit, one from the diſeaſe, and the other not lighter from the ſtanders by, and helpers, when it were much better, for the Fit

to be ſuffer'd to paſs over after its own manner, and the ſick to endure but one trouble only.

Truly the chiefeſt care of a Phyſitian, and efficacy of medicines is uſed about the prevention of this Diſeaſe, that the cauſe being taken away, or its root cut off, all the fruits might wither; medicines requiſit to this Indication, reſpect many Intentions, which may yet be reduced, to thoſe two chief heads: to wit, in the firſt place, that the enkindling or matter of the diſeaſe, being ſupplyed immediately from the vicious Blood, or nervous Juice, and mediately from the viſcera, and firſt paſſages, be cut off; then in the ſecond place, that the evill diſpoſition of the Brain, and the ſpirits its Inhabitants, which is peculiar to the Epilepſie, be taken away.

As to the firſt Indication, here Vomits, purges, and other things, both evacuating, and altering, yea phlebotomy, and Cauteries, have place; for as much as by theſe means and ways, the impurites both of the viſcera, and humours are ſubdued or brought away; and their dyſcraſie or evill diſpoſition amended: for although theſe kinde of medicines, and medicall adminiſtrations, rarely or never cure the Epilepſie, by themſelves, yet thoſe take away impediments, ſet nature upright, and incite her to encounter her enemy; alſo, they prepare the way, that ſo ſpecific Remedies might more certainly, and efficaciouſly ſhew their virtues; wherefore uſually, whilſt they take care to cure this diſeaſe, with ſecrets and hidden myſteries, they make uſe of thoſe kinde of medicines between whiles, in the ſpring, and autumn, and other fit times.

2*ly*. As to ſpecific Remedies, which indeed only, though not allways, are able to reach the Epilepſie and to ſubdue it; of which ſort are the male Pæonie, Miſſletow, Rew, Caſtor, the Claws of an Elk, preparations of a dead mans Skull, Amber, Corrall, with many others. Foraſmuch as theſe are taken without any ſenſible evacuation, or alſo perturbation, following in the viſcera or humours, it is a wonder, by what formal reaſon, or virtue of acting, they are wont at any time to help in this diſeaſe.

In what the Virtue of the ſpecificks conſiſts in the Epilepſie.

Concerning this matter, intricate and obſcure enough, if there may be place for Conjecture, when as we have already aſſerted, the procatartick Cauſe of the Epilepſie, to conſiſt in the heterogeneous Copula, joyning or cleaving to the ſpirits, inhabiting the Brain, and inciting them to præternatural exploſions; it follows, that thoſe things which take away, or reſiſt ſuch a cauſe, muſt be of that nature, that by ſtrengthening the brain, and binding up its pores, may exclude that Copula, and ſo fix, and as it were binde the ſpirits, flowing within the middle or marrow of the Brain, from leaving their Copula, that they ſhall not be any more apt or prone, to irregular exploſions; Perhaps after the ſame manner, as when gunpowder or aurum fulminans being pounded with ſulphure, or ſprinkled with ſpirit of Vitriol loſes its thundering virtue. And indeed, theſe kind of properties, to wit, one or both of them, may be ſuſpected, yea, in a manner detected, in moſt anti-epileptick Remedies: For truly, Pæony, Miſſletow, Rue, the Lilly of the vally, with many others, abound in a certain manifeſt aſtriction, that 'tis likely, their Particles being taken inwardly, and ſo dilated to the brain, by the Vehicle of the blood, and nervous Juice, do ſo binde, and ſhut up its too looſe and open pores, that afterwards, they do not ly open, for the Paſſage of the morbifick matter: Beſides, for that theſe vapourous Concerts, breath forth as it were an armodiack ſcent or ſcattering, therefore they are ſayd to purifie the animal ſpirits, to fix them, and to ſtrengthen them, having put off their heterogeneous Copula: This virtue purifying the ſpirits, proceeding from an armoniac ſalt, is more apparent in Remedies, which are taken from the famuly of Mineralls, and Animalls, ſuch are the preparations of the humane Skull, of blood, amber, and coral, as the other more binding, rather exiſts, in the parts and preparations of Vegitables.

It will not be needfull here, for the curing of the Epilepſie, to propoſe a compleat method of healing, with exact forms of preſcriptions, becauſe there are extant every where among Authors, general precepts, and moſt choyce Remedies, and the Prudent Phyſitian will eaſily accomodate, both the Indications, and that plentifull proviſion of medicinal ſtuff, to the particular Caſes of the ſick. But becauſe we have exhibited a quite new Theorie of this Diſeaſe, here alſo ought to be rendred a Curatory method fited for it: which we ſhall deſcribe by and by more fully,

fully, after we have ſhewn you ſome caſes or Hiſtories, of people ſick of the Epilepſie.

A fair maid, ſprung from parents indifferently healthfull, being her ſelf very well, till about her coming to ripe age, about that time, ſhe began to complain of her head being ill: And firſt of all, ſhe felt neer the fore part of her head, by fits, a Vertigo or giddineſſe, whereby all things ſeemed to run round; and alſo whilſt this Symptom continued, ſhe was wont to talke idlely, and to forget whatever ſhe had but juſt done; Theſe kinde of fits at firſt paſs'd away within a quarter of an hower, and came again only once or twice in a month, in the interval of which ſhe was well enough: Afterwards, the aſſalts being made more grievous, by degrees, they alſo return'd more often, and within half a year, her brain being dayly more weakened, this giddineſſe or turning round, was plainly chang'd into the Epilepſie, that the ſick being ſtruck down to the ground, at every fit, was affected with Inſenſibility, and horrid convulſions, and alſo with foam at the mouth. The Domeſticks obſerv'd, that ſhe allways fell on the ſame ſide, ſo that ſiting neer the fire, if ſhe ſate in the right Corner ſhe would be flung in the midſt of the fire, but if in the left Corner, ſhe fell againſt the wall of the Chimny: once when being left alone in the houſe, ſhe fell upon the burning Coals, and ſo miſerably burnt her face, and forepart of her head, that the skull being made bare of the skin and fleſh, a deep and large eſcar was burnt into it: and afterwards the outer ſhell of it fell off a hands bredth. In the mean time the ſick maid, ſo long as the ulcers contracted by the burning, ran with filthy matter, ſhe was free from the fits, but afterwards, they being healed up, the falling evill returned: This Diſeaſe began firſt to ſhew it ſelf about the time of puberty, for this maid, preſently after the begining of it, had her Courſes, and afterwards they conſtantly obſerved their ſet times, though her diſtemper grew dayly worſe: Various kinds of medicines being adminiſtred to this ſick Creature, availed nothing, becauſe it was the cuſtome and practiſe, of her, and her friends, quickly to change both the Phyſitian, and method of Phyſick, if an happy event did not preſently follow, and to betake themſelves very much to every Empirick, and outlandiſh Mountebanks. 1. *Obſervation.*

That in this Caſe, the Vertigenous Diſtemper, with a ſhort delirium, was the forerunner of the Epilepſie, it plainly argues, the original of this Diſeaſe being planted in the middle of the brain, to depend upon a certain inordination of the Spirits; to wit, thoſe dwelling there, at the begining, begun to admit an heterogeneous Copula; which being more plentifully heaped up, being moved either of its own accord, or occaſionally, while it was ſhaken off, induced, by reaſon of the ſpirits being diſturbed, and not yet very exploſive thoſe former diſtempers; Afterwards, from the ſame cauſe, by degrees growing worſe, the perturbations of the Spirits did raiſe up their manifeſt exploſions, and chang'd the vertigo, and *Delirium*, into the Epilepſie.

But that this maid began to be ſick, about the time of ripe age, it hence evidently follows, as the natural ferment, ſo ſometimes the præternatural, explicates it ſelf, firſt at that time; wherefore, as it happens, that the menſtruous purgations doe then firſt break forth, ſo the ſeeds of the falling ſickneſſe, whether innate or acquired then budded forth a little, and by degrees were ripened into fruit: when the præternatural Ferment firſt appears, ofttimes the natural following, blots it out, hence the Epilepſie of young ones, often ends about the time of puberty or ripe age, but if that *F*irment, or taint of the diſeaſe, comes after the menſtruous flux, or together with it, and ceaſes not preſently, it remains for the moſt part afterwards, during Life, of it ſelf untameable, and not to be overcome by any Remedies.

From this obſervation, that a Cautery accidentally, and by chance being made on this ſick party, freed her from the fits of the Diſeaſe, it may be inferr'd that fontanells or Iſſues, may be profitably adminiſterd, in the Cure of the Epilepſie: for whereſoever an emiſſary is opened, for the conſtant carying away of the ſerous water, both from the blood, and nervous juce, there very many heterogeneous and morbifick particles, flow out with it, that therefore the brain might remain free.

The Daughter of a Brewer of *Oxford*, had been very obnoxious to a *R*heume falling into her eyes, from her Infancy, otherwiſe ſtrong aud ſound enough, alſo accuſtomed dayly to hard labour, about the 14*th*. year of her age, ſhe began to be 2. *Obſervation.*

be tormented with Epileptick fits, of which ſhe ſuffered neer the greater changes of the moon, eſpecially then returning: Being asked to endeavour her Cure, I gave her a Vomit of precipitate Solar, and order d it to be renewed three days before every new, and full moon; beſides that ſhe ſhould take at every turne, for four days after the Vomit, twice in a day, a dram of male-Pæonie root in powder, with a draught of black Cherry water. By theſe remedies, the fits ſo long intermitted, that the Diſeaſe ſeem'd to be Cured. Afterwards when they returned again, ſhe was again recovered by the uſe of thoſe medicines: and then the menſtruous flux breaking forth, and obſerving its true periods, ſhe remained for the future, free from that diſeaſe.

The Therapeutic or Curatory Method.

IN the Curing of the Epilepſie, I judg it fit to begin with a Cathartick, and if the ſick can eaſily bear vomiting, firſt let an Emetick be adminiſtred, and for ſeveral months, let it be repeated, four days before the full of the Moon. For Infants, and youths, may be preſcribed wine of Squills, mixed with freſh *Oyle of Sweet Almonds*, or alſo of *Salt of Vitriol*, from half a Scruple, to 1. Scruple: For thoſe of riper years and of a ſtronger Conſtitution may be preſcribed the following forms of Medicines. *Vomitories.* Take of *Crocus mettalorum*, or of *Mercurius vitæ* gr. iiii. to vi. of *Mercurius Dulcis* grain xvi. ℈ i. let them be bruſed together in a mortar, mix it with the pap of a roſted Apple or of *Conſerve of Burage* ʒ i. make a Bolus; or you may take an Infuſion of *Crocus Mettalorum* or *Mecurius Vitæ* made in Spaniſh wine from ʒ ß. to ʒ i ß. or take of *Emetick Tartar* of *Mynſicht* gr. iv. to vi. who are of a tenderer conſtitution, let them take of the *Salt of Vitriol* ℈ i. to ℥ ß, and half an hour after let them drink ſeverall pints of poſſet drink: then with a feather or finger put down the throat, let vomiting be provoked, iterate it often.

The day following the vomiting, unleſs any thing ſhall prohibit, let blood be taken out of the Arm, or from the hæmorhod veins with a Leech: then the next day after let a purging medicine be taken, which afterwards may be repeated conſtantly, four days before every new Moon.

Purges. Take *Reſine of Jalop* ℈ ß. *Mercurius Dulcis* ℈ i. of *Caſtor* gr. iii. of *Conſerve* of the *Flowers of Pæony* ʒ i. make it into a *Bolus*. Take *pill fœtida* the greater ℈ ii. of *Hyſterica* what will ſuffice, make thereof v. pills. Take of the ſtrings of *black hellebore* macerated in Vinegar, dry'd, and powder'd ʒ ß. of Ginger ℈ ß. of the *Salt of Wormwood* gr. xii. of the *Oyl of Amber* drops ii. make a powder, let it be given in the pap of an Apple. Take of the powder of *Hermodactils* compound ʒ i. of *humane Scull* prepar'd gr. vi. make a powder, let it be given in a draught of the *decoction of Hyſſop*, or *Sage*.

On thoſe days that they do not purge, eſpecially about the time of the changing of the Moon, let there be adminiſtred Specifick Remedies morning and evening, which are ſaid to cure this Diſeaſe, with a certain innate and ſecret virtue: of theſe there are extant a very great company, and are preſcribed in various forms of Compoſitious.

Specificks. The moſt ſimple Medicines, which Experience hath found to be very Efficacious, are the *root of the male Pæony*, and the *ſeeds* of the ſame. Take of the *Root of the Male Pæony* dryed and powder'd ʒ i. to ii. or iii. let it be given twice a day in the following Tincture. Take of the *leave of Meſſletow* of the *Oak* ʒ ii. of the *root of Pæony* ſlic'd ʒ ß. of *Caſtor* ʒ i. let them be put into a cloſe Veſſel with ſimple water of *Betony* or *Pæony*, and white-wine Each ℔ i. of the *Salt of Miſſletow*, of the *Oake* or the *Common Miſſletow* ʒ ii. let them digeſt cloſe in hot ſand for ii. days, let them take ʒ iii. with a doſe of the aforeſaid powder.

Poor people may take of the aforeſaid powder, in a decoction of *Hyſop* or *Caſtor*, made with fair water and white-wine.

At the ſame time, let the *Root of Pæony* be cut into little bits, and being ſtrung upon a thrid, hung about the neck. Alſo let the Roots being fryed in a pan, or boyled tender, be eaten dayly with their meat.

Take of the *Roots* and *Seeds* of the *male Pæony* each ʒ ii. of *Miſſletow* of the *Oake*, of the *hoof of Elk* ʒ i. each let them be ſliced and bruſed, and put into a thin ſilk bag, and hang at the pit of the Stomack.

Among

Among the ſpicificks, this powder is greatly commended by many Authors. *Powders.*
Take of *Caſtor Opoponax*, *Dragons blood*, *Antimony*, and the *ſeed* of *Peony*, each alike, make a powder, of which may be taken ʒ ß. to ʒ i. every morning, with wine, or ſome proper decoction, or with *black Cherry water*.

Take of a *mans Skull* prepar'd ʒ i. of *Miſſletow of the Oake*, of *Counterfeit Cinaber*, of an *Elks Claw*, each ʒ ß. ſo mingle them. The doſe is ℈ ß. to ℈ i.

If the form of powder be diſtaſtful to any one, or if it ſhould become loathſome by the long uſe of it, *Electuaries*, *Pills*, *Troches*, *Spirits*, and *Elixirs*, each of which agree with ſpecifick medicines, are wont to be preſcribed.

Take of the *Conſerve* of the *male Peony*, of the *Lilly* of the *Valley*, each ʒ iii. of *Electuaries.* the *ſeed* and *root* of the *male Peony* powder'd each ʒ ii. prepared *Corall* ʒ i. of the powder of *Pearls*, and of *humane Skull* prepared, each ℈ ii. of the *ſalt* of *Miſſletow*, of the *Oake* ʒ i ß. with what will ſuffice of the *Syrop* of *Corall*, make an *Electuary*, let them take of it morning and evening, the quantity of a Nutmeg.

Take of the powder of the *root* of the *male Peony* ʒ i. of the *ſeeds* of the ſame ʒ ß. of *Miſſletow* of the *Oake*. of an *Elks claw*, of *humane Skull*, prepared, each ʒ ii. of the *roots* of *Angelica*, *Contrayerva*, *Verginian Snakeweed*, each ʒ i. of the whiteſt *Amber*, of *Calcined Corall* each ʒ i. of the *Common Salt of Miſſletow*, ʒ ii. of *Sugar Candy* ʒ viii. diſſolved in what will ſuffice, of the *Antiepileptical water of Langius*. Make a Confection, of which take twice in a day, the quantity of a Nutmeg.

Theſe powders, by adding to them, the *Salt of Amber*, and *Harts-horn*, with *Pills.* what will ſuffice of *Balſome Capivi* may be formed into a *pillulary Maſs*, of which may be taken iii. or iv. pills, in the morning and evening, drinking after them a draught of ſome appropriat Liquor.

Or of thoſe ſorts may be prepared an *Elixir*, of which may be taken viii. drops to x. twice in a day, in a ſpoonful of a proper *Julup*, drinking a little of it after it.

Take of *Hungarian Vitriol* vi. pints, let them be diſtill'd with a glaſs retort in *Elixir.* hot ſand for 24. hours, then let the ſame retort, being defended or done over with Clay, be put with a large receiver in a reverberating Furnace, that the acid ſpirits may be forced with a moſt ſtrong fire, till they come forth. The whole Liquor being diſtilled, let it be drawn off in hot ſand, in a leſſer glaſs retort, and let there be poured into the *Matrace*, of the *roots of Male-Peony*, cut into pieces and dryed ʒ iiii. of the *ſeed* of the ſame ʒ i. of *humane Skull* prepared, of *Elks claws*, and *Red Corall* each ʒ ß. *Miſſletow* of the *Oak*, ʒ ii. let it digeſt with a gentle heat for ſeveral days, to the extraction of a tincture, the Liquor being decantated, let it be drawn off in a glaſſe Retort to a third part remaining: being ſtilled forth keep it by it ſelf: to thoſe Remains pour of the rectified Spirit of wine a little quantity, impregnated with the Infuſion of the ſame ingredients, and let it digeſt for ſix days in horſe-dung, the doſe of which is ℈ ß. to ℈ i. The diſtilled Liquor may be given from half a ſpoonful to a whole ſpoonful, for the ſame Intentions.

Or let there be prepared an oyl, out of the *Salt of Venus* or *Copper*, according to the deſcription of *Henry Van Heers*, and given as there preſcribed.

Among the ſpecifick Remedies, which (when the former ſhall not be profita- *Emperical Remedies.* ble) ought alſo to be tryed, are the *Livers of Frogs*, the *Gall of a Bore*, dryed with Urine, The powder of *Bryony Root*. The powder of a *Cuccow*, of *Crows*; the *rumet* and *lights* of a *Hare*, the *Liver of a Wolf*, *ſtones taken out of Swallows*, the *Liver* of a *Kite*, the Eggs of *Crows*, with many more, to be dayly taken with food or Medicine; a famous Catalogue of which is extant of *Henry Van Brays*, a Phyſitian of *Zutphen*: and from which, preſcripts for poor people, may be taken, eaſie to be prepared, and without great coſt.

Whilſt theſe kinde of Remedies are to be taken inwardly, according to the aforeſaid method, ſome outward adminiſtrations being applyed, bring help, and are deſervedly admitted to part of the cures; therefore, allways Iſſues are made in this diſeaſe, in one fit place or other, and alſo more often Veſicatories or Bliſters.

Amulets hung about the neck, or born at the pit of the Stomach, are thought *Amulets.* to be uſeful: The freſh *Roots of Peony* cut into little ſquares, and being ſtrung like bracelets, and hung round about the neck, and as ſoon as they are dry, let new be put in their places, and they being reduced to powder, may be taken inwardly: Take of the *roots* and *ſeeds* of *Peony* each ʒ ii. of an *Elks claw*, and *humane Skull* prepared, each ʒ i. of *Miſſletow* of the *Oak*, ʒ ß. let them be beaten into groſs powder

powder, and ſowed in a piece of red ſilk, and like a little bag let it be hanged about the neck.

An *Amulet* of a *ſtalk* of the *Elder*, found growing in the *Willow-tree*, is greatly Commended.

Plaſters. It agrees with ſome, to have their heads ſhaven and a plaſter applied to the fore-part. Take of the *root* and *ſeeds of Paony*, of *Caſtor*, *Miſſletow* of the *Oak*, of *humane-skull* moſt finely powder'd, each ʒ i. of *betonie* plaſter ʒ ii. *Caranna Tacamahacca*, each ʒ ii. *Balſum Capive*, what will ſuffice, make a maſs, and let it be ſpread upon leather, make a plaiſter for the ſuters of the Head.

Let the Temples and Noſtrills, be often anointed with *Oyl of Amber*, by it ſelf or mixed with *oyl Capive*.

Sternutories or ſneezing powders. *Sneezing Powders*, and ſuch as purge the head of *Rhume*, are to be uſed dayly in the Mornings: Take of *white Hellebore* ʒ i. of *Caſtor*, and *Euphorbium*, each ʒ ß. the *leaves* of *ſweet Marjorum*, and *Rue*, each ʒ ii. make a powder; make a decoction of *Sage* or *Hyſſop*, with *Muſtard* diſſolved in it, with which gargle the mouth and throat.

A Gliſter may be ſometimes uſed, as need ſhall require.

Sometimes the more ſolid Medicines are ro be moiſtned with liquids, or they ought to be drunk after them, for which end, diſtilled waters ſhould be at hand, *Julups*, *Tinctures*, or *Decoctions*, which are endued with a certain Specific Virtne againſt this Diſeaſe.

Diſtill'd Water. Take of *Hungarian Vitriol* four pound, of the powder of freſh *humane-ſkull*, four ounces, of the *root of Paony* ſliced, ſix ounces, let them be bruiſed together in a morter, put to them either of *Spaniſh wine*, or ſmall *white-wine*, or *wine* made of the juce of *black-Cherries*, a quart; being fermented in a veſſell, let it be diſtill'd in a glaſs retort, in hot ſand.

Take of the ſhavings of *box-wood*, of *Hungarian vitriol*, each two pound, of the *Miſſletow* of the *Oak*, or the *Common-Miſſletow* leaves, three handfulls, of *Rue* two handfulls, being bruiſed together, put to it of *Spaniſh wine* 4 pints: Let them be diſtill'd in a glaſs Cucurbit with hot ſand.

Iulaps. Take of *Common Vitriol* ſix pound, of the *root* of the *male-paony* ſix ounces, of the *Miſſletow* of the *Oak* one ounce, of *Green-walnuts*, viii. ounces, beiug cut and bruiſed, let them be diſtilled in a glaſs-pot, a *glaſs alembick* being placed upon it, in hot ſand. Take of this Liquor one pint, of *black cherry water*, and of the *water* of the *flowers* of the *toil*, or *Line-tree*, each half a pint, of *white-Sugar*, ʒ iiii. mix them, and make a *Julup*, the doſe ʒ ii. to iii. twice or thrice in a day.

Oxymel of *ſquills*, alſo an *hony-decoction* with *Hyſop*, are much praiſed by the Ancients. Or an *Apozem* of this kinde may be prepared, of which may be taken ʒ iiii. to vi: or viii. twice in a day.

Apozems. Take of the *roots* of *male-paony*, *Angellica*, *Imperatoria*, *Valerian*, each ʒ vi. of the *leaves of Betony*, *Sage*, *Lilly* of the *Valley*, *Penny-Royall*, each one handfull, of the *ſeeds of Rue*, *Nigella*, each ʒ iii. *Paony*, ʒ ß. of *Rayſons*, ʒ iii. of *Liquoris* ʒ ß. being cut and bruiſed, let them be boyled in vi. pints of *Spring-water*, to the Conſumption of the third part. Towards the end, add of *black Cherry-wine*, half a pint, or ten ounces, ſtrain and keep it in cloſe Veſſells. The doſe is from vi. to viii. ounces, twice in a day, after the afore-preſcribed Remedies.

Or the aforeſaid Ingredients, excepting the *Liquoris*, and *Rayſons*, may be boyled in vi. pints of *Hydromel*, or *water* and *hony*, or *meath*, to the Conſumption of the third part: The doſe ʒ iiii. to vi.

Great Remedies. If that the aforeſaid Method, conſiſting in the uſe of *Cathartick*s, and *Specificks*, being for ſome time tryed, and altogether in vain, you muſt come to Remedies of another kinde, and chiefly to thoſe called Great, or Notable: In this rank are placed *Diaphoreticks*, *Salivation*, *Bathes*, and *Spaws*.

Alphonſus Ferrius affirms, that he had cured many Epileptical people, with a decoction of ſimple *Guaicum*, being preſcribed twice in a day, and taken, to vi. or viii. ounces, and its ſecond decoction drunk (as in the cure of the *Pox*) inſtead of ordinary drink. If to ſuch a decoction the *roots of Paony* and other ſpecificks ſhould be added, perhaps it would be more efficatious. It ſeems probable, that a *Salivation* ſtrongly excited from *Mercurie*, and afterwards a *ſudoriferous* or *Sweating-Diet* following, might certainly cure this Diſeaſe. What *Baths*, or *Spaw-waters* are able to do, I have not obſerv'd, either by my own or others experience.

Perhaps

Perhaps I have made tryall, that our Artificial *Spaws*, sometimes have been available in Curing the Epilepsie, to wit, both those impregnated with *Iron*, and also with *Antimony*, and taken in a great quantity, for many days.

CHAPTER IV.

Of other kinds of Convulsions, and first of the Convulsive Motions of Children.

After the Epilepsie, as it were the principal Spasm, in the chief place excited, to wit, within the middle part of the brain, the other Kindes of Convulsions come to be treated of in order. The differences of those, are best taken from a two-fold kinde of cause, and the various manners, and accidents of either. We have already shown, that all Spasmodic distempers, do flow, either from the meer irritation of the spirits or from their explosion, by reason of the cleaving of an Elastick *Copula* to them, or jointly from both, together: wherefore, the manifold Ideas of Spasms, may be distinguished, and distributed into certain Classes, as it happens for this, or that cause, or either together, to remain in the various places of the *Encephalon*, or the nervous Appendix. For indeed, the Spasmodic matter, or the explosive Copula of the Spirits, finding a passage chiefly, and most often thorow the Brain, and sometimes in some measure thorow the extremities of the nerves, subsists either about the origine of the nerves, or their middle processes, or their outmost ends, or abounds in their whole passages, as shall be by and by more particularly declared: Further, an irritation stiring up Convulsions by it self, or with a previous remote cause, although it be made every where in the nervous stock, yet it chiefly, and more frequently produces such an effect, about the beginings, middle processes, and foldings, or ends of the Nerves. But the same Kinde of Cause and effects, are after one manner in Infants and children, and another in youths, and those of riper age. Since therefore we have determined, particularly to consider, all the kindes of Convulsions, we will first discourse of the Convulsive motions of Infants, and Children.

Infants, and children, happen so ordinarily, and frequently to be tormented with Spasmodick Distempers, that this is reconed the chief, and almost the only Kinde of Convulsions; for the Symptoms of this kinde, in other more ripe people, are wont to be called by other known Names, and referred to the Epilepsie, hysterick, hypochondriac, Collic passions, or also to the Scurvie: but in children, they are called, as it were by way of Excellency, Convulsions.

As to this we must observe, that children are found to be greatly obnoxious to Convulsions, chiefly about two seasons, to wit, within the first month after they are born, or about their breeding of Teeth: Although it often happens, that the assaults of this Disease, may come also at other times, and from certain other Causes.

In the first place therefore, it very often happens, that children newly born, or at leaster'e they are two months old, are afflicted at every turn with Spasms, excited in divers parts; for that inversions of the eyes, distortions of the cheeks, and Lipps, or tremblings, yea Contractions of the Tendons, and frequent jerkings or leapings forth of the members, and sudden shakings of the whole Body, infest them; and that the same effect likewise sometimes afflicts the præcordia, appears plain enough, because whilst the Spasms buse the Limbs, and outward members, also the face becomes now pale, now of a livid, or dead Colour, from the blood stagnating in the heart, and the Lungs being at that time contracted. As therefore, Spasms are wont to infest three Regions of the Body in children, to wit, the parts of the head and face, the outward members and Limbs, and the Præcordia and viscera, we observe now these regions, now those, now, two or all together to be possessed, by the morbific Cause, to wit, as it is fixed, either about the beginings, or ends of the nerves; and when the former of these hap-

pens, as the superior part of the oblong pith, the middle, or the lowest part of the spinal marrow, is touch'd, one, or more parts together, are assaulted by the morbifick Cause.

As to the other Causes of this Distemper, to wit, the procataric and evident, those of the former Kinde, do chiefly consist in two things, first that all the parts of the Head in Infants are very weak, and abound with a viscous humidity; to wit, the Brain less firm, and the tone of the nerves very loose, so that they are not able to bear the more light force of every matter, but the Spirits inhabiting them, are easily incited into irregular motions or Spasms, by the proper liquour, wherewith those parts are watered, if it flows never so little immoderately, or at least more plentifully, than for the measure of so little strength. But in the second place, because it appears by observation, that children, not only, nor all, who are of a more tender Constitution, are found to be prone to this Disease, therefore, this ought to be rather accounted for a reason, of the more remote morbid Cause, that the Blood, and nervous Juce, are originally vicious, in some Infants, by reason of evills coutracted from the womb: For that the sanguineous mass, wanting eventilation for many months past, becomes impure in children newly born; wherefore, broad and Red puttings forth, like the small pocks, shew themselves through the whole skin, in most children, soon after they are born; to which sort of wealks, or effloreſcences, if they are hindred, or repressed, oftentimes dangerous exulcerations, about the parts of the mouth follow. Hence we may deservedly suspect, such impurities of the blood, sometimes to be poured forth into the brain, and nervous stock, considering their debility, and for that reason Spasmodic Distempers to arise; to wit, whilst the blood being vitious from the womb, endeavours to purifie it self, it transfers its fæculencies into the head, which were wont to be exterminated by the putting forth the Red-gum, or red spreadings thorow the skin: Wherefore, a water now thin, and Serous, now thick and sticking, and either participating of præternatural Salts and sulphures, is layd up within these or those receſſes, and Cavities of the Brain, Cerebel, and oblong pith, the recremeuts of which, when they begirt the beginings, or ends of this or that nerve, and sometimes many together, affix on the Spirits inhabiting them, heterogeneous particles, and apt for Spasmodic or Convulsive explosions. For as soon as the nerves have deeply imbibed such particles, the spirits being burthened with their Copula, endeavour either of their own accord, or being incited by evident Causes, to thrust, and shake it off; and so they enter into Spasmodic, or Convulsive explosions.

The evident Causes, which bring on Convulsive motions in children prædisposed, are of two Kindes, *viz.* In the first place, whatsoever stir up unwonted efferveſcencies of the blood, whether they be exceſſes of heat or cold, a too plentifull nourishment, or hotter then should be, the changes of the air, and weather, and chiefly the periodical times of the Moon; for by reason of these, and other the like occasions, the Blood growing more hot than by right it should be, affixes sooner to the Spirits an heterogeneous Copula, even to a fullneſs, and causes it presently to be struck off, and exploded, by them throughly disturbed. *2ly.* An Irritation, in almost every part of the nervous System, does not seldome bring into Act, a Spasmodic or Convulsive Disposition: wherefore, not only an exceſs of tangible qualities, outwardly inflicted, but the milk Coagulated in the stomack, choler, or other sharp humours, or also wormes knawing the Inteſtines, are wont to excite Spasms or Convulsions: Besides, these kinde of evident Causes, as they are stronger, sometimes induce Spasmodick Distempers of themselves, and without a prævious Disposition: even so worms, and perchance sharp humours, cause Convulsive motions to some children, at least to the more tender.

That it might more certainly, and to the sense appear, what kinde of morbifick matter might be in Convulsive motions, I have opened the dead bodies of many, which this disease had oppreſt: I have allways in vain sought the cause, within the Viscera, and first passages of Concoction; In the heads of many, a serous water being heaped up, within the Cavity, under the Cerebel, and distending the Membrane which cloaths the oblong pith or marrow, did overflow the beginings of the nerves: in some, no footsteps of this Disease appeared: so that, what sticking to the Spirits did irritate them into explosions, was of so imperceivable a bulk, and its originall so altogether hid, that it could not be found out,

by

dy the most perspicatious scrutiny of the sight. Sometime past, in this City, many chilbren of a certain woman dyed of this Disease, at length, the fourth, as the others, dyed within the month; we dissected the Head, and here no serous Colluvies or water did overflow the ventricles, bnt only the substance of the Brain, and its appendix, was moister then ordinary, and looser; what was most worthy of observation was, that in the Cavity, which lyes under the Cerebel, upon the trunk of the oblong pith, we found a remarkable heap of clotter'd, and as it were concreted blood: but in truth it is uncertain, whether this matter, deposited there from the begining, had primarily caused the convulsions; or rather, whether this blood being extravasated, and expressed, by the contraction of the parts, planted round about, was not the effect, and product of the Convulsions, and not the cause of them; for also in Apoplectical people this kinde of Phænomenon ordinarily happens, which yet we shall afterwards shew, to be rather the effect, than the cause of the disease.

Indeed, the heterogeneous Particles, which flow to the blood, from the womb, are wont to be sent away through efflorencies or Cutaneous Pustles in the whole Body, in many children, in others being poured on the hezd, are the material cause of the Convulsive Distemper, may be inferr'd, besides the reasons before recited, from the remedies chiefly helping: For that in little children obnoxious to this hæreditarie Disease, the Convulsive fits are best prevented, if that an Issue be made Presently after they are born, in the nape of the neck, and blood drawn with a Leech from the jugular Veins; for the corruptions of the nervous juce, are brought away by that, and the impure buddings of the blood, are diverted from the head by this: by these ways of Administrations, when before two or three children, of the same Parent, have dyed of Convulsions, soon after they were born, all the rest have been freed from the same evill.

2*ly*. Thus much concerning the Convulsive motions of Children, which are wont to infest them, by reason of an Infection contracted from the womb. If that at this bout they should escape the Disease it self, or at least its deadly strokes, nevertheless, about rhe time of breeding teeth, they would be found at last to be obnoxious, to the same danger: for when the Teeth, especially the greater, are about to cut, oftentimes a feavour is excited, to which not seldom Convulsions are Joyned: and though at this Time, children are grown stronger, and may better bear the fits of the disease, then when new born, yet the convulsive Distemper, now stirred up by no other grievous occasion, becomes very dangerous, and sometimes deadly.

But forasmuch as childern, who fall into feavours, about the time of breeding of Teeth, are not all tormented with Convulsions, it therefore follows, that some disposition to this disease, either innate, or acquired, doth precede; and that the pain caused from the breeding the Teeth, is to be esteemed only the means of a more strong evident Cause, to wit, Children, who being indued either with a Cacochymia, or juce causing ill digestion, or with a more weak constitution of the brain, and nervous stock, have their animal Spirits too much adulterated, or dissipable, are sometimes disposed for the coming of Convulsive distempers: wherefore, when so acute pain, together with a feavor, afflicts, that latent disposition is brought into Act.

If it be here ask'd, for what reason a feavour, and then Convulsive motions following thereupon, come to those Prædisposed, in teething, it may be answer'd, that either effect may be attributed to the pain, as the immediate Cause: We experimentally know by our selves, what the torment is, that follows an irritation about the roots of the Teeth; in truth so great, and so cruell, that a more cruell can scarce be; for that one or two notable shoots, of the 5th pare of nerves, reaches to the roots of each Tooth, which when it ss hauled by the sharp particles of the Blood, or other humours, there layd up, causes a most sharp sense of trouble, or pain, by its Corrugation: But this kinde of Vellication or hauling of this Nerve, happens thus to children breeding teeth, because that the membranes and fibres, are every way distended, by the Teeth, now increasing into a greater bulk, and as yet included within the scarce hollow gums: hence the blood being hindred in its Circulation, causes a tumour, and so presses the nerves, and also pours on them the more sharp particles of the Serum, by which, being notably pulled or hauled, they are tormented with Corrugations, and painfull Spasms.

Therefore, when ſo cruel pains happen to children, from their breeding Teeth, it is no wonder if a feavour, and alſo Convulſive motions ſometimes follow: the former of theſe happens, both for as much as the blood being hindred about the pained part, is not circulated with its wonted and equall courſe, wherefore it becomes inordinatly moved, in the whole Body; and beſides, becauſe Spaſms being ſtirred up ſomewhere in the nervous ſtock, the corrugated and contracted nerves, preſſe together, and pull the Arteries, and by that reaſon, ſtir up irregular and feavouriſh fluctuations in the Blood. But ſometimes Couvulſions happen in breeding Teeth, both becauſe the blood growing hot, ſends forth heterogeneous particles, to the animal government, and ſo ſtirs up the ſpirits into exploſions; and beſides alſo, when this acute pain, and as it were a Lancing, follows upon the teeth being about to cut, it communicates a very troubleſome and irritative ſenſe, from the affected parts, to the firſt ſenſorie, preſently from thence, the motion of the rage is retorted, by the ſame or other neighbour nerves, which by reaſon of a prævious diſpoſition, doth not rarely become convulſive.

Beſides theſe two occaſions of Convulſions (which are wont to be chiefly, and more often in children) to wit, the times of Infancy, and breeding Teeth, this Diſtemper alſo is excited at other Times very often, and for other Cauſes: For in whom the Seeds of the *Spaſmodick* Diſpoſition is ſown, they ſometimes unfold themſelves preſently after the birth, and are ripened into morbid fruit; or elſe lying hid for a while, they now come before the breeding of Teeth, and follow a long time after it; and by reaſon of other evident cauſes, to wit, either external, or Internal; of which ſort are a ſickly, or breeding nurſe, milk Coagulated in the ſtomack, or degenerating into an acid or bitter putrifection, a feavouriſh diſtemperature of the head, Ulcers or wealks of other parts ſuddenly vaniſhing, the Changes of the aire, the Conjunctions, oppoſitions, and aſpects of the Sun, and moon, aud ſuch like; they at length break forth into Act, from an uncertain event. Concerning theſe, there is no need, that we ſhould particularly diſcourſe.

When all the Children, of a man dwelling in the neighbourhood, dyed of Convulſions, within the ſpace of three months, at length, to prevent that fatal event, they ſought for remedies, for a child newly born: I being ſent for, a few days after the being brought to bed, firſt adviſed the making an Iſſue in the nape of the neck, then, that the next day after, a leech being applyed to the jugular veine of each ſide, two ounces of blood ſhould be taken away: beſides, that about every conjunction, or oppoſite aſpect of the Sun, and moon, about five grains of the following powder ſhonld be given, in a ſpoonfull of Julap, for three days, morning and evening. Take of humane Skull prepared, of the root of the male Pæonie, each ʒ i. of the powder of Pearls ʒ ß. of white ſugar ʒ i. mingle them, and make a very fine powder: Take of the waters of Black Cherries ℥ iii. of the antiepileptic of Langius ℥ i. of the Syrrop of the flowers of the male Pæonie ʒ vi. mingle them; alſo I order'd that the nurſe at the ſame times, ſhould take a draught of whey, or poſſet drink, in which were boyled, the ſeeds and roots of the male Pæonie, and the leaves of the Lilly of the Vally, the Infant for about four months was well, but then began to be troubled with Convulſions: at which time, the ſame Remedies being adminiſtred both to the child, and to the nurſe, in a larger doſe, veſicatories alſo were applyed behind the eares, and blood was taken by the ſucking of a Leech, from the jugular veins: within two or three days the child grew well: afterwards, whenever within four or five months the Convulſions return'd, it was cured again, by the uſe of the ſame Remedies. After half a year, the Convulſive motions wholly ceaſed, but a painfull Tumour aroſe, about the lower part of the *Spina dorſi* or back-bone, from which proceeded a certain diſtortion of the *Vertebræ*, or joynts of the back bone, and a weakneſs of the legs, and at length a Palſie. It ſeems in this caſe, that the Spaſmodic or Convulſive matter, being wont to come upon the brain firſt, and beginings of the nerves, entring at laſt the *Spinal* marrow, and being thruſt out at its further end, it wholly ſtopt up the heads of the appending nerves, and ſhut out the paſſage of the Spirits: to wit, becauſe other narcotick, and more thick, had joyned themſelves, to the exploſive particles.

The Curatory Method againſt the Convulſive Diſtempers in Children.

IT is to be endeavour'd either to prevent the Convulſive paſſions, threatning Children and Infants, or to cure them being already begun.

The Preſervation of Infants from Convulſions.

For if the former children of the ſame parent, were obnoxious or lyable to Convulſions, that evill ought to be prevented timely, by the uſe of Remedies to thoſe born after: It is uſuall for this end, to put into the mouth of the child newly born, ſome antiſpaſmodick Remedy, aſſoon as it begins to breath: from hence ſome are wont to give them ſome drops of the pureſt hony, others a Spoonfull of Canary ſweetned with Sugar, and ſome again oyl of Sweet Almonds freſh drawn, to ſome may be given half a Spoonfull of epileptic water, or one drop of oyle of Amber.

Beſides theſe firſt things given to Infants, which certainly ſeem to be of ſome moment, certain other Remedies and means of Adminiſtrations, ought to be uſed: to wit, let one ſpoonfull of Liquor, proper to this diſtemper, be drunk twice a day: as for example; Take of the water of black Cherry and of Rue each ℥ i ß. of the Antiepileptic of Langius ℥ i. of the Syrrup of Corall ʒ vi. of prepared Pearl *gr.* xv. mix them in a Viol. On the third or fourth day after the birth, let an Iſſue be made in the nape of the neck, then if it be of a freſh Countenance, let a little blood to about ℥ i ß. or ii. ounces be taken, by the ſucking of Leeches, from the jugular veins, having a care leſt the blood ſhould flow out too plentifully in its ſleep; let the temples, and the hinder part of the neck, be gently rub'd with ſuch a like oyntment. Take of oyle of nutmegs by expreſſion ʒ ii. of Capive ʒiii. of Amber ℈ i. Let an Amulet be hung about the neck, of the roots and ſeeds of the greater Pæonie, a little of the hoof of an Elke being added to it.

The Method of Curing to be uſed to the Nurſes.

Moreover antiſpaſmodick Remedies, ſhould be dayly given to the Nurſe: Let her take morning and evening, a draught of whey or poſſet-drink, in which the roots and ſeeds of the male Pæonie, and ſweet fenill ſeeds are boyled. Take of the Conſerve of the flowers of Betony, of the male Pæonie, and of Roſemary each ℥ ii. of the pouder of the Root, and flowers of the male Pæonie, each ʒ ii. of red Corall prepared, and of the whiteſt amber each ʒ i. of the roots of Angelica, and Zedoarie prepared, each ʒ ß. with what will ſuffice of the Syrrop of Pæonie, make an Electuarie: let her take morning and evening, the quantity of a Nutmeg.

Take of the powder of the *root* of *Male-Paony* ʒ ii. the *ſeeds* of the ſame ʒ i. make a powder; of the whiteſt Sugar ℥ iii. diſſolved in the water of the *flowers* of the *Line-tree*, and boyled to tablets, of the *oyl of Amber* ℈ i. make tablets according to Art, each weighing ʒ ß. let her eat one every ſixth hour. Alſo let her keep to an exact dyet.

The Cure of Infants ſick with Convulſions.

If any Infant be actually afflicted with Convulſions, becauſe that an Iſſue operates little, and ſlowly, it will be expedient to apply bliſtering plaiſters, to the nape of the neck, and behind the ears, and unleſs a more cold temperament ſhould gain-ſay it, let blood be drawn with Leeches, from the veins: Let Liniments be uſed about the Temples, Noſtrills, and hinder part of the neck, and plaiſters alſo laid to the bottoms of the feet; Clyſters that may keep down the belly, ſhould be dayly adminiſtred: beſides let ſpecifick Remedies be inwardly taken, often in a day, to wit, every ſixth or eighth hour.

Oyntments.

Take of the *oyl Capive*, of *Caſtor* each ʒ ii. of *Amber* ʒ ß. make a Liniment.

Take of the plaiſter of *Oxycrocia* two parts, of diſſolv'd *Galbanum* one part, of *oyl of Amber* ℈ i. make a plaiſter for the ſoles of the feet. Let there be given of the powder of *Ammoniacum*, according to the deſcription of *Reverius*, twice or four times in a day.

Pouderi.

Take of *humane skull* prepared, of the *ſeeds* of *Paony*, of an *Elks claw*, of *Pearls* prepared, each ʒ ß. of *Amber greeſe*, gr. vi. make a powder; the doſe vi. grains, in a ſpoonfull the Liquor hereafter deſcribed, three or four times a day.

Or Take of *humane Skull* prepared, of pearls each ʒß. of the *Salts of Amber* ℈ i. of the *Sugar of Pearle* ʒ i. the doſe ℈ß.

Or Take of the *Spirit of harts-horn* iii. drops, let it be given every ſixth or 8th hour, in a ſpoonfull of the Julap below preſcribed.

To

To the children of the poor, may be administred the *powder* of the *Roots* of *wild Valerian* ℈ß. to ℈ i. let it be given twice a day, in a spoonfull of milk, or appropriate Liquor.

Untzerus greatly commends the Gall of a sucking whelp, to wit; that the whole juice of the gallie-Bag being taken forth, be given to the child to drink, with a little of the water of the *flowers* of the *Tile*, or *Line-tree*.

A learned Physitian lately told me, that he had Known many Cured with this Remedie: Besides, Empericks are wont to cause the bigger children, after they have drank the gall, to eat also the Liver of the whelp broyled.

Liquors. Inlaps, distill'd waters, and other appropriate Liquors, may be prepared, after the following prescripts.

Take of *black-Cherry water*, ℥ iii. of the *Antiepileptical* water of *Langius*, ℥ i. of perlate sugar, ʒ ii. mix them.

Take of the green *Roots* of the *male Paeonie* cut into little peeces ℥ vi. of *Hungarian Vitriol* ℥ viii. of *humane skull* ℥ ii, of the *Antiepileptic water* of *Langius* half a pint, mix them, and let them be distilled in a glass retort, in hot sand, the dose i. spoonfull, to ii.

Take of the fresh roots of the *male Paeonie* cut, ℥ iiii. being brused in a Marble morter, pour to them of Spanish-wine, *lib.* i. make a strong expression, add of *manus Christi* pearled, ℥ß. let it be kept in a close glass. The dose i. Spoonfull, or ii. twice in a day.

Convulsions by reason of breeding of Teeth. When Convulsive motions happen by Reason of the difficulty of breeding Teeth, this Symptom as it is secondary and less dangerous, so the Cure, does not always require the first or chief labour of healing, but sometimes we are rather carefull to remove it, by allaying the pain, and the feavourish Distemper, wherefore both the patient, and the nurse, ought to use a slender, and refrigerating Diet; the Teeth being about to break thorow the Gums, their passage should be made easie, by rubbing or cutting them; and also *Anodynes* should be applied to those swelled, and grieved parts: Clysters and taking away blood are often used: it behoves to cause sleep, and to attemper the feircenes of the blood: some times antispasmodick Remedies are made use of, but the more temperate, and such as do not trouble the blood, and humors, Vesicatories, or Blistering plaisters, because they aptly evacuate the *serum*, too much poured forth on the Head, oftentimes bring help.

Spasms or Convulsions caused from other occasions. When Children are troubled with Convulsions, not presently after they are born, nor by reason of the cutting of their Teeth, but for other occasions, and accidents; the cause of such a Distemper, for the most part subsists, either in the head, or somewhere about the Viscera of Concoction. When the former is suspected, as it is wont to be manifested by signes which argue a *Serous Colluvies*, too much heaped up within the Head, the former Remedies, allready recited, ought to be given, in a larger dose; besides, in those, who are able to bear purging, sometimes a Vomit, or a light purge is prescribed: *Wine*, and *Oxymel* of *squills*, also *Mercurius Dulcis*, *Rhubarb*, and *Resin* of *Jalap*, are of approved use.

As often as the Cause of the Convulsive Distemper seems to be in the *Viscera*, either Worms, or sharp humors, stirring up the torments of the Belly, are understood to be in fault.

By reason of worms. Against Worms, a purge of *Rhubarb*, or *Mercurius Dulcis*, the *Resin* of *Jalap* being added, is ordained: sometime past, a Child being miserably afflicted with Convulsious, that he seem'd to be just dying, I gave him a dose of *Mercurius Dulcis*, with *Resine* of *Jallap*; with his stools, which were four, he voided xii. worms, and presently grew well.

Take of the *root* of *Verginian Snake-weed*, in powder ʒ i. of *Corall Calcined* to a *whiteness* ʒ ß. a powder ʒ i. the dose from half a *scruple*, to one *scruple*, twice in a day, continued for three days, drinking after it a decoction of *Grass-roots*. Take of the species of *Hiera* ʒ i ß. of *Venice-Treacle* ʒ ii. make a plaister for the bottom of the belly, or apply to the Navel, a plaster of *Galbanum*.

If the Convulsive motions are suspected to proceed from an irritation of the ventricle, and intestines, made by sharp humours, a gentle purging, either by vomit, or stool, or both successively ought to be instituted. For this end, let them drink, a gentle Emetick, of wine of squills, or salt of vitriol; when even the sick are troubled with a striving to Vomit of their own accord: but if the other Evacuation,

cuation, or down-wards shall seem better to be tryed, they ought to take an Infusion of *Rhubarb*, or the powder, and *Syrrop* of *succory* with *Rhubarb*, or of *Roses* with *agaric* and very often by these Remedies, timely applyed, I have seen the Convulsive Distempers in Children to be cured: besides in this Case, Clysters are frequently used: but external Medicines are not to be omitted; to wit, fomentations, oyntments, plaisters applyed to the Belly.

Take of the *flowers* of *Cammomel* cut very small, ii. handfulls, let them be put into two little bags, made of fine Linnen, or Silk, which being dipped in warm Milk, and wrung out may be applyed successively to the abdomen, or lower region of the belly.

Take of the tops or flowers of *Mallows*, in like manner but small, let them be fryed in fresh butter, or hogs Lard, and in the form of a Liniment, or a Cataplasm, applyed to the Belly.

CHAPTER V.

Of Convulsive Diseases, of Ripe Age, arising chiefly by reason of the Nervous origine being affected.

ALthough Convulsive Distempers, which happen to those of riper years, being known by other Names, also are commonly reputed of some other stock, and are wont to be referr'd to the passions called Hysterical, Hypochondriacal, or Colical, or to the Scorbute; yet if the matter be a little better consider'd, it will easily appear, that some Convulsive Symptoms, both in Men and Women, do come from the Brain, which Convulsions properly and truly challenge to themselves the Name: But these (as we have already mentioned) may be distinguished after a various manner, by the manifold seat of the morbifick Cause, but chiefly into these three kinds, *viz.* Into Spasms or Convulsions stirred up, by reason of the origine of the Nerves being chiefly affected; into others being stirred up, by reason of the extremities or ends of the Nerves, being possessed by the morbifick matter; and lastly into such, from whose head the morbific matter descending, fills the whole passages, or the most part, of some certain Nerves, or of all together. *Three kinds of Convulsions happning to those of riper years.*

Therefore, that we may proceed, to unfold the Convulsions, arising from the beginnings of the Nerves being affected, take notice here, that the morbifick matter beseiging the beginnings of the Nerves, doth sometimes chiefly flow into the first pair of Nerves, to wit, which respect the Muscles of the eyes and face, and from thence the contractions, aud tremblings, now of the Nose, Cheeks, or Lips, now of the Eyes, or the distortions of the mouth, follow. Secondly, sometimes the wandring and intercostal pair do chiefly imbibe the Heterogeneous particles; and then Inflations, or Contractions of the Abdomen, and Hypochondria, and also the palpitation of the Heart, trembling, difficult and interrupted breathing, an intermitting pulse, and other Symptoms of the middle, and lower Belly, do very much infest. Thirdly, but sometimes the morbifick Cause being placed lower, affects chiefly the spinal marrow, and therefore the outward members, and limbs, are rendred obnoxious to inordinate leapings forth, and contractions: Further, in very many Cases of this nature, because the Animal spirits being explosed about the origine of the Nerves, do inordinately leap back towards the *Encephalon*; for that reason, to all Convulsions almost being excited by this means, the *Vertigo*, also the scotomie or giddiness, the tingling of the eares, and sometimes the amased Insensibility or falling down of the Spirits, are joyned, or follow. *Distempers arising from the Nervous origine distinguished.*

1. *According to the various Nerves being affected.*

But as we may Conjecture, from the various figures of the Convulsive distemper, it seems, that the Convulsive matter hauling those, or these nerves, or many of them together, is lodged either about their beginings, only, so that the Spirits in that place being often explosed, a frequent and very troublesome Vertigo arises, besides tremblings, and a short faintness about the Præcordia, swoonings, and often leapings, and light contractions in the Viscera, or muscles are felt. Or Secondly, the explosive particles being dilated to the beginings of the nerves, enter

2. *According to the Various places of the same Nerves being affected.*

ter more deeply into their processes, and not seldom being slidden down into the nervous foldings, belonging to the Præcordia, or the Viscera of the lower belly, or also to the exterior members, procure there, other as it were nests of Convulsive distempers, that as often as the Spirits about the nervous origine, are driven into explosions, presently, fits as it were hysterical, asthmatical, or otherways Convulsive, arise in the Abdomen, Thorax, or Limbs: Examples of these, and by what means they are made, shall be anon more clearly delivered: In the mean time, the spasmodic matter, flowing into the pipes of the Nerves, when it is transfer'd even to their processes and remote enfoldings, yet, forasmuch as it hath still its chief mine about the nervous original, therefore after very grievous Convulsions of the Viscera or members, a great perturbation of the Brain follows thereupon, with a tingling of the eares, a vertigo, and often an Insensibility or amased excurtion of Spirits: but sometimes the morbific matter, as to the greatest part, being translated to the fartherst ends of the nerves, from thence they become free or clear about their beginings: For I have observed many, who, whilst at the begining, they were infested with the vertigo, often fainting away with fear, head-ach, and heavyness about the hinder part of the head, to have felt about the *Præcordia* or *viscera*, only light inflations, or tremblings; but afterwards, suffering more cruel Convulsions about these parts, they did not complain of the former distempers of the Head.

By what means the convulsive matter flows into the Nerves.

If it should be further demanded, concerning the Convulsive matter, from what place it should be brought, and by what ways carried towards the beginings of the Nerves, and what kinde of Settlement, and as it were cherishing nests it there obtains; we say, that although we cannot detect the footsteps, and manifest passages of this matter, yet so much may be collected from certain observations, and the analogie of things, it may be supposed there are these two distinct manner of passages, whereby the Convulsive particles, being first poured out into the Brain and Cerebel, from the blood, are from thence carried towards the beginings of the Nerves: *viz.* First sometimes this matter being imbibed by the Brain and Cerebel, and by degrees passing thorow, the pores of either, slides into the Trunk of the oblong marrow, whose tract being also overcome by it, together with the nervous juice, it slides forward towards the original of the Nerves, and is heaped up neer their heads, or within the medullarie trunk it self, or within the annularie Prominencies, in which places, either a long while subsisting, it stirs up frequent *Vertigoes*, and more light Convulsions, in remote parts as hath been said; or being slidden from thence, more deeply into the passages of the nerves, excites fits of Convulsions very Cruel: such a progress of the morbific Cause, we suspect in whom the Vertigo, swooning, heavines of the head, and torpor of the minde, go before the Convulsive assalts: Indeed, the matter of the disease, abounding as yet in the brain and marrowy Appendix, produces these kinds of previous distempers; which being slidden from thence, into the Nerves, causes Convulsions.

2*dly*, There is yet another way, whereby it plainly appears, that the materiall cause of the Convulsive Distemper, is transferred, to the beginnings of the Nerves; to wit, when the same being deposited by the *serous water* within the Cavities, or ventricles of the Head, it is insinuated into the Neighbouring roots of the Nerves: For in *Chronical* Diseases, when the remarkable discrasie of the blood and humours, happens also to be accompanied with a praved disposition of the brain, oftentimes a great plenty of sharp *serum*, infesting the Nervous stock, dropping forth from the Vessells of the *Choroeidan*, or retiform enfoldings, slides into the ventricles of the brain, and its Appendix: But this serous water, afterwards breaking thorow the under-spreading of the *Cerebell*, into the fourth ventricle, the little skin there being displaced, whereby the oblong marrow is uncovered, it falls upon the beginnings of one or more of the Nerves, and either by irritating, or imbuing them, with Heterogeneous and explosive particles, induces the Convulsive disposition. And this for the most part is the cause, that sick people, after long and ill handled Feavours, also after the more grievous *Cephalic* Diseases, at length dye of Convulsions; as I have found, by the frequent Anatomie of the Carcases, of those who dyed by that means. Also it appears by anatomical Observation, that the brain may be overflowed by a certain serous water, without the distemper of the Convulsive disposition; and further that in some, who

who dyed of the Epilepſie, and other Convulſive diſeaſes, there was no deluge of the *ſerum*, within the ventricles of the brain: By which it is given us to be underſtood, that the Convulſive diſtempers, do not flow only from the waterie matter in the Head; but that they ariſe not at all from ſuch a cauſe, unleſs the *ſerous* water, overflowing the *ventricles* of the Brain, and chiefly that underlaying of the *Cerebel*, be imbued with heterogeneous and exploſive particles. I remember once, my Councel to be ask'd for a young man labouring with an Egregious Phtiſis, and at that time truly deſperate, beſides a cough, and ſhortneſſe of Breath, he had grievouſly complained for many days, yea weeks, that he could not lye upon his back in his Bed, or whilſt he ſat in a chair, he could not lean his head backwards: for that by this, or that poſture of his Body, he was wont preſently to ſuffer tremblings of his heart, and a fainting of the Spirits, as if he were juſt about to dye: wherefore of neceſſity he was fain to hold his head upright, or leaning forward. After he was dead, his carcaſe being diſſected, his Lungs appeared all over tumified, and in ſome places Ulcerated: then his Skull being opened, there flowed within all the *Ventricles* of the brain, a great quantity of yellow and ſalt *Serum*: which water certainly whilſt it did ſlide forward upon the fourth *Ventricle*, about the Trunk of the oblong marrow, his head leaning back, ruſhing upon the heads of the wandring, and intercoſtal pair of nerves, did ſtir up the aforeſaid Convulſions about the *Præcordia*: but ſo long as his head was inclined forward, that the heap of *ſerum* flowed back into the anterior *Ventricles* of the Brain, the origine of the nerves remained free from that Convulſive matter.

Having hitherto ſhown, how many ways, and by what paſſages, the morbific matter, being dilated towards the origine of the Nerves, ſeems to bring on Convulſions, it were eaſie, according to theſe reaſons, to unfold many Convulſive Symptoms: for beſides the Convulſive motions of Infants, and children, oftentimes excited from the ſame kinde of Cauſes, hither may be referr'd the Contractions, and ſudden leapings forth of the nervous parts, which follow upon feavours. As alſo thoſe paſſions commonly called *Hyſterical*, alſo *hypocondriacal*, and certain others, proceed not ſeldom from the *morbific* Cauſe, ruſhing upon the beginings of the Nerves. We will therefore endeavour to eſtabliſh the truth of this *Hypotheſis* by ſome other Hiſtories, and examples, of Sick people; but in the firſt place, we will propoſe obſervations of that Kinde, in whom the morbific matter, ſetling upon the beginings of the nerves, and not being as yet ſlid deeply into their proceſſes, induced frequent *vertigos*, and only more light Convulſions, of the *Viſcera* and *Præcordia*.

A noble woman about 30. years of Age, of a tender Conſtitution, and lean in Body, was wont every winter to be grievouſly afflicted with a *Catarrh* or Rhume, flowing upon the winde pipe, and Lungs, with a hoarſe Cough, and great ſpitting, but the laſt year, great care and dilligence being uſed, ſhe avoyded that evill. But after the winter Solſtice, having taken cold, ſhe was troubled with an huge pain of the head, a tingling of the ears, a giddineſs, with a great defluxion upon the eyes, that it eaſily appeared, that the heap of *Serum*, which before this time was wont to diſtill into the Breaſt, was now wholly layd up, within the head and Brain: beſides, an effect of which was, that as often as ſhe began to ſleep, ſhe was greatly infeſted with paſſions, as it were *hiſterical*, to which ſhe had never been before obnoxious: For when ever being ſleepy ſhe cloſed her eyes, preſently a bulk aſcending in her belly, a choaking in her throat, tremblings, and leapings about the *Præcordia*, were ſtirred up; which Affections notwithſtanding quite ceaſed, when ſhe was thorowly awakened, ſo that the Sick party was neceſſitated, to abſtain almoſt altogether for many days and nights from ſleep. *1. Obſervation.*

Being ſent for to this Lady, after ſhe had bin ſick and weak for many days, I was compelled at length to uſe gentle medicines: Therefore I took care, that blood ſhould forthwith be drawn from the foot, to four ounces, and every day a Clyſter of milk and ſugar to be adminiſtred, by which ſhe was wont to have three or four ſtools: beſides I gave her every eighth hour a doſe of the Spirits of *Harts horn* in a Spoonfull of the following Julap. Take of the water of *penny-royall*, of *walnuts*, and *black Cherries* each ℥ iii. of *Hiſterical water*, ℥ ii. of the Syrrop of *Clove-gilliflowers* ℥ i ß. of *Caſter* tyed in a little knot, and hang'd in the middle of the glaſs ʒß. of the powder of Pearls ℈ i. mingle it. I Cauſed with ſucceſs, a *veſicatorie* to be put behinde the ears, and a *Cataplaſm*, of the leaves of *Rue* and *Cuccow-*

pint, with the *Roots of Bryony*, *bay ſalt*, and *black ſoap*, to be layd to the ſoals of her feet. Sometimes I gave her in the evening, in a little draught of the preſcribed Julap, half an ounce of *Diacodium*, to which ſucceeded a moderate ſleep, without the wonted Convulſions following: which kinde of effects, from opiats exhibited in the like caſe, I have often experimented: for the quenching her thirſt, I gave her a *Ptiſan*, with diuretick Ingredients boyled in it: by the uſe of theſe, ſhe was very much eaſed, in a ſhort time. But what proved a great benefit to her was, that an Impoſthume in her ear, breaking of its own accord, powred forth, at firſt a yellow matter, and afterwards for many days, a great plenty of thin *Ichor* or *Excrement*, by which Evacuation, the Convulſions of the *Viſcera* and *Præcordia* wholly ceaſing, the diſeaſe was perfectly Cured.

As to the Reaſon of the aforeſaid ſickneſſe, without doubt it ſeems, that thoſe Diſtempers were excited, by the ſerous colluvies, layd up within the Bounds of the Head: for the tranſlation of that humour into the head, brought at firſt both the Diſeaſe, and the Secretion or flowing of it out, thorow the Emunctuaries of the ear, took away all the Symptoms: Beſides, when the morbific matter had brought in to the Spirits, planted about the beginings of the nerves, a Diſpoſition ſomewhat exploſive, they, though being ſtruck as it were with madneſs, they were continually troubled, yet ſo long as leaping back towards the Brain, they obtained a ſpace, in which they might be more freely expanded or ſtretched forth, they did indeed only more vehemently exerciſe the Phantaſie, and without farther trouble did only cauſe watchings. But, when by ſleep ſometimes Creeping upon her, , the excurſion of the unquiet Spirits were reſtrained towards the Brain, (which indeed neceſſarily happens, when we ſleep, the nervous Liquor within the pores of the brain, at that time being more plentifully admitted) they tumultuarily ruſhing upon the heads of the wandring pair, and intercoſtall Nerves, troubled the whole *ſeries* of Spirits, flowing within the paſſages of thoſe Nerves, and ſo cauſed the aforeſaid Convulſions, about the *Præcordia*, *Viſcera*, and muſcles of the Throat. I have known many both Men and women ſick after this manner, who, when they have been troubled with an headach, an heavineſs of the hinder part of the head, or a *Vertigo*, have while they ſlept, felt forthwith in their *Præcordia*, or *Viſcera*, or in both together, perturbations as it were Convulſive; which indeed happens from the bending downward of the tumultuating Spirits, being reflected from the brain, upon the beginings of the Nerves: But that the uſe of opiats, brought a pleaſing ſleep to this ſick perſon, without the wonted Convulſions, following, the reaſon was, becauſe the animal ſpirits, as unquiet and furious as they were, yet by the Intanglement of the narcotick Particles, they were bound as it were in chains, that afterwards, without any reſiſtance they were overcome by ſleep. I have indeed very often happily cured, moſt grievous fits of Convulſions, both Aſthmatical, and as it were hyſterical, by adminiſtring Opiates.

2. *Obſervation.* An honeſt woman M. G. of 67. years of Age, yet of a florid countenance, and fat in body, when ſhe had been a while obnoxious at firſt to a ſwelling of the face, and very grievous fits of the headach, ſhe fell through the great cold of the winter, into a very troubleſome *Vertigo*, with a trembling of the heart, a fainting away of the Spirits, and a frequent ſtriving to vomit: being lay'd in her bed, if ſhe opened her eyes, or turn'd her from one ſide to another, ſhe was preſently troubled with a notable gididneſs, or ſwimming in the head, with ſwooning, and effectleſs vomiting. Viſiting this woman, I doubted not, but that the cauſe of her ſickneſs was, the Convulſive matter, being tranſlated from the exterior region of the head, to the moſt inward receſſes of the *Encephalon*, by whoſe inſpiration or heterogeneous *Copula*, the animal ſpirits being, touched while they leaped forth inordinatly towards the brain, they excited the vertiginous Diſtemper, and while they ruſhed tnmultuarily upon the heads of the nerves, the Scotomie, diſorder of the *Præcordia*, and endeavouring to vomit. A large Veſicatory or bliſtering Plaſter, being applyed to the nape of the neck, and behind her ears, Cliſters dayly adminiſtred, alſo the uſe of *Spirits of harts-horn* frequently, and of a Cephalick Julap, cured her within a few days.

3. *Obſervation.* A noted man, about 34. years of Age, when he had been for a long time ſubject to a Cough, with great aud thick ſpitting, beſides having the pores of his skin very open, he was wont to ſweat continually, and every night to be wet with it:

it: about the begining of the ſpring, he perceived thoſe uſuall evacuations to happen more ſparingly; in the mean time, he Complained of a fullneſs of his hands and feet, and as it were a certain ſwelling or puffing up, ſo that he feared a dropſie was coming upon him; beſide he was troubled in his head with a giddineſſe, and frequent *Vertigo*: A little while after, this evill increaſing, light contractions, and ſudden Convulſions, were ordinarily excited, about his Lips, and other parts of the mouth and face; alſo preſently after (the morbific matter as it ſhould ſeem, flowing upon the beginnings of the wandring pair and intercoſtal nerves) he was afflicted with the trembling, and leaping of the heart, with frequent fainting away of the vital ſpirits, as if a *Leipothymy* or ſwooning was falling upon him.

I know that very many aſcribe theſe Convulſive paſſions, ſo grievouſly infeſting the *Præcordia*, to the vapours riſing from the ſpleen: but it ſeems much more reaſonable, to deduce them from the Convulſive matter layd up within the brain, and ruſhing upon the beginnings of the Nerves; becauſe a ſhifting or tranſlation of ſome excrements, from ſome other parts, to the head goes before, and that it is ſo layd up, within the compaſs or bounds of the *Encephalon*, the almoſt continual vertiginous diſtemper, and the Convulſions of the parts of the mouth, and face, teſtifie it plainly: wherefore *I* thought good to preſcribe to this man, Remedies, according to the method hereafter ſhown.

I might be able here to propoſe many obſervations of this nature, in whom the morbific matter, ſubſiſting neer the beginnings of the nerves, ſtir up light Spaſms or Convulſions, only of the *Viſcera* or members, with a *Vertigo*. But becauſe a portion of this matter, deſcending from the head, enters more deeply the pipes of the Nerves, and ſo ſtrows the tinder or enkindling of exploſive ſeed, as it were gunpowder, about their middle and ultimate proceſſes and enfoldings, it will be to the purpoſe, to add ſome examples of this kinde.

A certain young maid E.L. tall and hanſome, ſprung from ſound parents, and her ſelf (as far as might be Perceived) originally healthfull, after ſhe had ſerv'd a maſter long ſick, being a long time and almoſt continually with him, and was forced to watch whole nights very often, and alſo at other times, ſo that ſhe never ſlept but ſhort and interrupted naps; ſhe at length begun to complain of an heavineſs in her head, and a frequent *Vertigo*: within a little time after, the diſtemper growing worſe, ſhe felt tremblings in her whole body, with a light ſhaking of her members, which came at certain times, though wandring and uncertain: afterwards ſhe ſuffer'd fits plainly Convulſive, and thoſe horrid, and often infeſting: a little before the approach of the diſeaſe, ſhe was afflicted with a ſhort *Scotomie*, or ſwimming in her head, by and by ſhe felt a ſtreightneſs, and great oppreſſion of her Breaſt, whereby all her *Præcordia* were drawn together: then preſently gnaſhing her teeth, and giving a great groan, ſhe was wont to fall to the ground; in the mean time, ſhe was ſenſible, but labouring with the great oppreſſion of her heart, till that conſtriction of her breaſt was looſned, ſhe was not able by any means to riſe: afterwards, when the fit was paſt, ſhe was diſturbed a good while, with a great palpitation of the Heart, an heavineſs of the ſenſes, and a great debility of the animal function. After that this Sick maid had liv'd ſubject to theſe kinde of fits, being very often repeated, for about 14. months, ſhe at laſt became Epileptical, that as often as the aſſault of the evill returned, being flung proſtrat on the Earth, ſhe was taken with the inſenſibility or amazedneſs of Spirits, with the foaming at mouth, and other peculiar ſymptoms of the falling-ſickneſs. Neither did this diſtemper ſtay here, but ere the ſpace of a year was elapſed, it degenerated into madneſs, that at laſt, the ſick maid, having loſt the uſe of her Reaſon, grew ſometimes mad with fury, and ſometimes was plainly ſtupid and fooliſh. *4 Obſervation.*

It is plain, from the beginning, progreſs, and often *metamorphoſis* of this Diſeaſe, that it at firſt, had its cauſe, and ſeat in the head, near the beginning of the nerves, and from thence, did dayly unfold more largely its bounds, both into the brain, and into the nervous Syſtem; for from the beginning, the morbific matter, conſiſting neer the beginnings of the nerves, Cauſed only lighter Spaſms or Convulſions, of the *Viſcera* and members, and ſhakings, with the *Vertigo*; afterwards, a portion of it being ſlidden into the pneumonic nerves, and their foldings, produced moſt grievous Convulſions of the *Præcordia*, *Diaphragma*, and *Ventricle*; *The reaſon of the aforeſaid Caſe.*

and also another portion of the same matter invading the Brain, and its marrow, caused the Insensibility or amazedness, and so the fits of the Falling-sickness; and at length, the texture of the spirits being wholly vitiated, and their *Latex* being degenerated into a most sharp, and as it were Stygian Liquor, the convulsive distempers pass'd into madness.

Therefore, as to the particular reasons, both of the disease, and symptoms, it seems, that the aforesaid Virgin, by her sedentary Life, (she being deprived altogether of the exercise of the body, and the use of a more free Air,) but chiefly by her nightly watchings, and being frequently interrupted of her sleep, she had contracted a vitious disposition of the blood, and humours, and also a praved and weak constitution of the brain, and Nervous stock (to which may be added, that she did perpetually attend on a master, sick of most grievous distempers of Convulsions, and by that means, had received perchance some contagion, or convulsive Infection: And first of all indeed, the Heterogeneous particles being poured forth, together with the nervous juce, into the brain and Cerebel, and there cleaving to the spirits, as it were skirmished with the preliminarie scotomie, and vertigenous distemper; then the convulsive matter, settling upon the beginnings of the wandring pair and intercostal Nerves, and the spinal marrow, brought in, with the Vertigo, the leaping of the *Viscera* and Muscles, and their lighter shakings: Afterwards, when entring more deeply the pipes of the Nerves, it was carried into the Cervicall, and Cardiac, and perhaps intercostal, and other unfoldings, and embued the spirits, performing the office of respiration, and the pulse, with an explosive *Copula*; they being brought into explosions at every turn, together with their superiors, inhabiting the nervous origine, by reason of fullness, or because of irritation, excited most horrid Convulsions of the respective parts: But the fit growing strong, from the pneumonic or breathing Nerves being strictly bound, the sudden inordinate systole of the Thorax, was stirred up; then presently, the *Diaphragma* being suddenly, and vehemently drawn back, the obstreperous ejulation did succeed: Further, when by reason of the systole of the Thorax, being sometime continued, the blood being hindred, that it could not move, it *stagnated* altogether in the *præcordia*, therefore, during the fit, that great oppression of the heart, with want of speech and motion afflicted the sick maid: But in the mean time, while as yet the region of the brain remained free, and clear from the explosions of the spirits, the sick party remained in her senses, or memory: but afterwards when the Convulsive matter being dayly increased, it was unfolded in the middle or marrowy parts, of the debilitated and broken brain, to the former passions, about the *præcordia*, came also the Insensibility and amazedness of spirits, then the Epilepsie, and lastly madnesse, for the reasons before recited. Many medicines, and of various kinds, being prescribed to this sick maid, by many, both Physitians and Empericks, but confusedly, and with an uncertain method, being presently changed, did her no good.

3. *Observation.* A certain fair woman, well coloured, and well flesh'd, from a setled grief, fell into a sickly disposition; about noon, and the evening, for the most part she was pretty well, but in the morning, when she had slept enough, and often indulg'd it too much, till she became very somnolent and heavy: being thorowly awakened, presently she was wont to complain of a heavinesse, and as it were a stupidness, in her whole head, with a *Vertigo* at every motion, or stirring about of her head; a little after she constantly expected a convulsive fit, or the insensible amazedness of the spirits, and sometimes this, sometimes that, was wont to infest her: for that after the *Vertigo*, as it were a *prævious velitation*, for the most part, she felt in her ventricle, and left side, an heavy or weighty pain running up and down here and there; hence belching, a striving to vomit, eruptions of blasts, also wonderfull distentions of the abdomen, and hypochondria, did follow, and sometimes for many hours, did miserably Exercise this woman; but sometimes these Symptoms hapned to be wanting, and then the distemper more cruelly afflicted her brain: for falling into frequent insensible fits, she was wont to continue a great while immovable, and with her eyes shut, without sense or understanding; and when her servants had moved her, by rubbings, and with the fume of Tobacco, she came by and by to her self, but presently again she fell into the like insensibility, and so for four or five times, before she could perfectly recover her self, and be without expecting to fall into these fits again. At length the Tragedy being acted,

acted, ſhe remained however affected with an heavineſs, and torpor of her head, in ſome meaſure: but about noon, all the clouds being diſcuſſed, ſhe was wont to obtain a fair, and ſerene diſpoſition of her whole head, untill the next morning, the ſame Symptoms would return again.

Who ſhall rightly weigh theſe Symptoms, need not ſuppoſe them vapours, ariſing from the womb, or ſpleen, and in thoſe ſeek for the morbific cauſe in vain: which truly may more certainly be placed in the head it ſelf: for it ſeems, that by reaſon of a great ſadneſs (which happens often to women) at the beginning, a great debility, together with a vitious taint, was impreſſed on her brain; ſo indeed that the animal ſpirits derived to the brain and Cerebell, brought with them, heterogeneous particles, of a mixt kinde, *viz.* Partly narcotick or ſtupifying, and partly exploſive or ruſhing forth: which kinde of Copula, when they had more plentifully conceived, through ſleep, they were ſtirred up to the ſhaking of it of, by mere fullneſs: as ſoon therefore, as the woman was awakened, the ſame ſpirits, being moved, either a bending downward being made below, they were depreſſed upon the beginnings of the Nerves, and there being exploſed, they excited Convulſions of the *viſcera*; or leaping back towards the middle of the brain, and being there ſtruck off, they brought in thoſe frequent and terrible Inſenſibilities. In truth, this diſtemper was ſomewhat akin to the Epilepſie, but that the morbific matter was not as yet ſtayed within the regal palace of the brain, or its middle part, ſo that there it might infect the ſpirits, within their Fountains; but yet, the ſame heterogeneous Copula, did cleave more ſtrictly to them, diſſociated or disjoyned below, and dividing themſelves into various and leſſer rivolets, according to the beginnings of the Nerves. In the mean time, the ſpirits, whereby they might ſhake off that matter, being often exploſed, cauſed the ſtupor, and Inſenſibility, but bending to ſome other place, they ruſhed upon the beginnings of the Nerves, for that reaſon caus'd thoſe Spaſms or Convulſions of the *viſcera*: But that the fits come only in the morning, after a plentiful ſleep, the reaſon was becauſe the heterogeneous Copula of the ſpirits, coming to them with the Nervous juce, was at that time gathered together to a fit fulneſs for exploſions, which being then wholly ſhaken off, the ſick perſon remained therefore all the reſt of the day, free from the diſtemper, till the next day, when the nights ſleep had brought to the head, a new ſupplement of morbific matter, the like fit returned in the morning; which perhaps, as the ſleep had been ſhorter or longer, was moved now within the brain, now near the nervous origine.

An Obſervation of a diſtemper as it were hyſterical in a man.

But it may be obſerv'd, that Convulſions have ariſen, from the nervous origine, being chiefly affected, not only in the female ſex, as the weaker and more lyable, but ſometimes, theſe kinds of diſtempers have been excited in men, from the like *procatartic* cauſe. Some years ſince, being haſtily ſent for from a ſtranger, who lodged in this Citty, at firſt ſight, I ſuſpected that he was poſſeſs'd, and believ'd that he had more need of Exorciſms, than of Medicines. He was about Forty years old, who had now for about three years, at certain ſet times of the year, been wont to be troubled with convulſive Motions; whilſt he by chance lodg'd here, for a few days about his occaſions, by reaſon of a great ſadneſs, he had a fit of his ſickneſs greater than uſuall: He was wont for two or three days before-hand, to feel the coming of his diſeaſe; to wit, from a great commotion within the forepart of the head, almoſt a continual *Vertigo*, and frequent dimneſs of his eyes: But the fit coming on him, at firſt his eyes were variouſly roled about, and inverted, then a certain bulk, like a living animal, was ſeen to creep from the bottom of his belly upwards, towards his heart and breaſt, and from thence to his head: I my ſelf preſſing his belly, with my hand, felt very plainly this kinde of motion, and as long as I hindred this round thing from aſcending, with both my hands, and all my ſtrength, he found himſelf indifferently well; but as ſoon as this ſwelling creeping upwards by degrees, had reached the head, preſently the members of the whole body were cruelly pull'd together, that he would daſh himſelf againſt the walls, or poſts, as if poſſeſt by an evill ſpirit; He could hardly be held, and reſtrain'd, by four ſtrong men, with all their force, but that he would leap from them, and fling out his arms, feet, and head, here and there, with divers manners of motions: when he ceaſed from leaping forth, or ſtrugling, his members would be ſtrongly extended, and his muſcles ſtiff, as if troubled with the Cramp, or ſtiff extenſion: ſuch a fit would laſt about a quarter of an hour, then coming

coming to himself, he would talk soberly, and walk about in his Chamber; he knew what he had suffer'd, and ask'd pardon of the standers by, presently after he began to draw his eyes inward, and swiftly to role them about: then presently the convulsive distemper returning, acted the like Tragedy as before: and after this manner, he would have five or six of these kinde of convulsive fits, within three hours space. In the midst of one of these fits, a vein in his Arm being opened, and a large orifice made, the blood flowed out slowly, and was seen presently to be congealed: and so indeed, that being received into the dish, it did not flow about, after the manner of Liquors, with a plain and equal *superficies*; but like melted sewet, drop'd into a cold vessell, one drop being heaped upon another, it grew to a heap.

The reason of the aforesaid Case,

If this strange distemper had hapned to a woman, it would presently have been said, that it was the mother, or histerical, and the Cause of it would have been laid on the fault of the womb; especially, for that the ascent of something, like a bulk, began the fit, from the bottom of the belly: But when this common solution, which most often is the mere subterfuge of Ignorance, cannot be admitted in this case, it seems most congruous to reason, to referr all these Symptoms, to the evill affections of the brain, and nervous stock. For truly it may be plainly gathered, that the cause of the disease, did lye hid in the head it self, by the Symptoms preceding the fit, which did denote a very great agitation of the spirits, within the head; that inflation of the brain, and heavy swimmings, which constantly came just as the fit was coming upon him, the turnings of the eyes, manifestly argue, that heterogeneous and explosive particles, did adhere to the spirits, dwelling within the *Encephalon*, near to the beginnings of the Nerves. So that this case, comes near to the nature of the Epilepsie, excepting, that the spirits within the middle of the brain, did not admit an heterogeneous Copula, nor being explosed in another place, did they tumultuously break forth there; for during the fit, the sick person was still in his senses, or had the use of his memory: But the morbific matter, being more plentifully laid up in the head, when from thence it was slid, more deeply into the pipes, both of the Interior und Exterior Nerves, it had placed mines of explosive seeds, very diffusive, in the *viscera*, both of the lower and middle belly, and also in the exterior members; so that, when the animal spirits began to be exploded, near the beginnings of the nerves, presently from thence, others inhabiting the mesenteric enfoldings, and then others in the other nervous enfoldings, interjected from the outmost bound, even to the head, being explosed in order, did even continue the Convulsions, from one part to another, untill they came to the head it self: but presently the explosion being translated from thence, to the spirits dwelling in the spinal marrow, and Appending Nerves, the most strong Convulsions of the muscles, and members of the whole body follow'd: But that, that ascent, as it were of a bulk, or substance which very often was perceived in the lower belly, about the beginning of the Convulsions, proceeding from the spirits, within the mesenterick enfoldings, being brought into explosions, shall be more largely declared anon, when we come to treat of hysterick passions.

In the mean time if it be ask'd, for what reason, that, the convulsive paroxysm, beginning in the part of the head, near the beginnings of the Nerves, presently the spirits dwelling in the outmost parts (as many as are pre-disposed for that Symptom) enter into explosions, and so transfer the convulsive Distemper, being there fully raised, upwards, (for it is for the most part so, whether the entrance of the disease begins in the bottom of the belly, or about the middle of the abdomen, the *Hypochondria* or *præcordia*, for that the Convulsion is wont to creep by degrees, from those places towards the head.) I say, for the solution of this, these two considerations are offer'd, to wit, in the first place we consider, that when some whole *series* of spirits is disturbed, those who reside in the extreamest bounds are first destituted of their originall Influence; wherefore, they, before others, grow tumultuous, and begin to grow irregular; hence it is, when the Nerve of the arm or thigh, is strained hard, by leaning on it, that the wonted Influence is hindred, that a numness, with a sense of pricking or tingling, is first felt in the fingers or toes; from whence by degrees, it creeps upwards towards the places affected. Secondly, the other is, and rather the reason of this distemper, to wit, that the spirits being ready for explosions, when they are contained with-

Wherefore the Convulsions begin from the extremities of the Nerves.

in

in the nervous pipes, one or more, as ſo many diſtinct little Tubes, they require a ſufficient ample ſpace, in which they may be able very much, and indeed ſucceſſively to be rarefied, aud expanded; which thing becauſe it cannot be eaſily performed, within the Trunks of the Nerves, from the beginning towards the end, therefore while the Spirits, about the nervous origine, being firſt ſtruck off, leap back towards the *Encephaleon*, for that cauſe they ſtir up the Vertigo: the more open exploſion of the ſpirits, for the moſt part, begins about the inferior paſſages of the nerves, or at their extremities, where the Trunk of the nerve is either dilated, into more ample foldings, or terminated in more *fibres* largely diſperſed abroad; then thoſe Spirits being exploſed, there is room made preſently for others ſucceeding in order, whereby in like manner they may be exploded: Hence we may obſerve, whilſt the exterior Spirits are exploded, if a Ligature or hard Compreſſion being made, the ſucceſſion of others into the ſame ſpace, or their progreſs toward the exterior parts be intercepted, the Convulſion is wont to be hindred, that it cannot aſcend upwards: wherefore when a numbneſs (as medical Hiſtories teſtifie) being ariſen from the fartheſt end of the finger, or toe, creeps to the ſuperior parts, with a tingling, or like a cold air, and at length reaching the brain, cauſes moſt horrid Convulſions; if by and by after the motion is begun, the Arm or thigh be ſtrongly tyed, the Spaſm or Convulſion not being able to get over the bound place, is hindred from coming to the head; yea, it is uſuall for hiſterical women, as ſoon as the ſwelling of the belly, or the aſcent of the bulk in the *abdomen* is firſt perceived, to gird ſtrongly their waiſts, with Swathing-bands, and ſo oftentimes they prevent, the *Præcordia*, and the region of the brain, from being diſturbed, by that ſame Convulſive Fit.

Wherefore the blood is ſoon congealed in convulſive diſtempers.

But that the Blood, being let out in the mideſt of the fit, was ſo ſoon congealed, indeed it very ordinarily happens to be ſo, in Convulſive and Apoplectical Diſtempers, as the moſt learned *Heighmore* hath firſt noted, out of *Hendochius*: But that ſome from hence contend, that Convulſions rely altogether upon the thickneſs of the Blood, and ſtagnation, its motion being hindred, cannot be granted: Becauſe, the blood taken from thoſe who are ſubject to convulſions, a little before the fit, is dilated with *ſerum*, and fluid enough: wherefore, we may lawfully think, that, that Congelation is cauſed by the *paroxyſm* it ſelf, becauſe in Convulſive motions, and immoderate Contractions of the Nerves, and *Viſcera*, the interflowing Blood, by the exhalations of its ſpirit, and *ſerum*, is ſomewhat looſened in its mixtion, and therefore in ſome ſort coagulated; like as when milk, by reaſon of too much agitation, and ſeparation of the parts one from another, grows into butter; wherefore this kinde of Coagulation of the Blood, ſeems rather to be the effect, than the Cauſe of the Convulſions.

The Curatorie Method.

AS to the Cure of theſe kinde of Convulſive Diſtempers, which in women, or men, proceed from the morbific cauſe lying upon the beginnings of the Nerves. The firſt Indication will be, to draw away the tinder or inkindling of the diſeaſe, *viz.* to hinder, that the blood may not affix on the head, the heterogeneous particles, either begot in it ſelf, or received elſewhere from the *Viſcera*. For this purpoſe, an evacuation, both by catharticks, and blood-letting, unleſs ſomething contradict, is wont to be benificially preſcribed.

Emeticks

Vomiting moſt often brings help, wherefore Emeticks of the Infuſion of *Crocus metallorum*, or of the *Salt of Vitriol*, or *wine of Squills*, is to be taken at the beginning. Then almoſt the next day, the taking away of Blood, either by *phlebotomy* in the Arm, or by Leeches in the Sedal veins, is to be performed; then afterwards, a gentle purge of *pills*, or ſolutive Apozems, is to be ordained, and timely repeated.

Purges.

Take of the *pills* of the *Amber of Crato*, or of the *Tartar of Bontius* ʒ ii. of the Reſine of *Jalap*, *gr.* xvi. of *Caſter* ϑ i. of the *oyle of Roſmary* or *Amber*, ϑß. of *gumm-Ammoniac* diſolv'd in hyſterical water, what will ſuffice to make 16. pills. Let 4. of them be taken every ſixth, or Seventh day.

Take of the *Roots of Polypodia* of the *Oak*, of *ſharp pointed-docks* prepared, of *Chervil*,

chervill, cach, ʒ vi. of the *male Paony*, ʒ iii. of the leaves of *Betony*, *germander*, *Chamipits*, *Vervine*, the *male Betony*, each i. handfull, of the ſeeds of *Cardamums*, and *burdock* each ʒ iii. let them be boyled in 4. pints of Spring water till half be conſumed: Let it be ſtrained into a matrace, to which put of the leaves of the beſt *Senna*, ℥ i. of *Rhubarb*, ʒ vi. of *Turbith* gummed ℥ ß. of *Epithimum*, of *yellow-Sanders*, each ʒ ii. of the *Salt* of *wormwood*, and *Scurvy-graſs*, each ʒ i. the yellow rine of the *Orange* ʒ ii. let them digeſt cloſe, ſhut, in hot Sand for 12. hours. let the ſtraining be kept for uſe, ſweeten it (if there be need) with what will ſuffice, of the *Auguſtan* Syrrop, or of *Succory* with *Rubarb*. The Doſe ℥ vi. once or twice in a week.

Every day, in which purges are not taken, Remedies ſtrengthning the brain, and alſo the animal Spirits; for the taking away the heterogeneous *Copula*, or for the hindring them from running into exploſions, are to be adminiſtred, which indeed ought to be preſcribed and choſen, according to the Conſtitution, and habit of the Body, and temperament of the ſick; for too lean bodys, and ſuch as being indued with a more hot blood, medicines leſs hot, and which do not trouble the bloud above meaſure, ought to be given: On the Contrary, for phlegmatick and fat people, whoſe urine is thin, and watery, and whoſe Blood is Circulated more heavily, and *Viſcera's* ſtuffed, more hot Remedies, and notably apt to ferment the humours, are deſigned. In the former Caſe, let it be preſcribed, after this manner.

Remedies for a more hot temperament.

Coroborating medicines and ſpecificks.

Take of the *Conſerve* of the *Flowers of Betony*, *Tamarisk*, the *male-Paonie*, each ℥ ii. of the *Species* of *Diamargerit frigida* ʒ iß. of the *powder* of the *Root* of *Paonie*, and of the ſeeds of the ſame each ʒ i. of *red-Corall* prepared ʒ ii. of *vitriol of ſteel*, ϑ ii. of the *Salt of Wormwood*, ʒ ii. with what will ſuffice of the juce of Oranges, make an *Electuary*, take of it twice or thrice in a day, drinking after it a little draught of the Julap hereafter preſcribed.

Powders.

Take of *Corall* Red, with the juce of Oranges, beaten together in a glaſs, or marble mortar, and dry'd, ℥ ß. of the powder of *miſletow* of the *oake*, of the root of the *male Paonie* ʒ ii. of perled ſugar, ʒ iii. make a powder, the doſe from ϑ i. to ʒß. twice or thrice in a day.

Take of the *Species* of *Diamargarit frigida* ʒ ii. of the *Salt of wormwood*, ʒ iii. of the root of *Cocowpint* powderd, ʒ i. mix them, make a powder, let it be divided into xx. parts, take a doſe in the morning, and at four in the afternoon.

Take of the *Roots of Butterbur* ℥ i. doſe ʒß, to ʒ i. twice in a day.

Diſtilled waters and Julaps.

Take of the *Leaves of Burdock*, and *Cocowpint* each vi. handfulls, let them be cut and mixed together, and ſo diſtilled. The doſe ʒ ii. to iii, twice or thrice a day, after a doſe of *Electuary* or *powder*.

Take of this water diſtilled ii. pints, of our *ſteel* prepared, ℥ ii. mix them in a Vial, let it be taken after the ſame manner.

Take of the Simple water of *walnuts*, and of *black-Cherries* each half a pint, of *Snales* ʒ iii. of the Syrrop of the flowers of the *male Paonie*, ℥ ii. the doſe ℥ iß. to two, after the ſame manner.

Take of the *ſhavings of Ivory*, and *harts-horn* each iii. drams, of the *roots of Chervill*, *burdock*, *Valerian*, each half an ounce, of the leaves of *Betony*, *Chamepits*, *harts-tongue*, the tops of *Tamarisk*, each one handfull, of the barks of *Tamarisk*, and of the *woody nightſhade*, each half an ounce, let them be boyled in two quarts of ſpring water, to the conſumption of the third part; add to it of *white-wine* eight ounces, ſtrain it into a pitcher, to which put of the leaves of *brook-lime*, and *Cardamine*, each one handfull, make an Infuſion warm, and cloſe for four hours: Let the colature be kept cloſe in glaſſes. The doſe ℥ vi. twice in a day, after a doſe of ſome ſolid Medicine; ſometimes ſuch an *Apozme* may be mixed with ʒ ii. of our *ſteel*, and taken in the ſame manner.

In the Summer time, the uſe of *ſpaw-waters* is convenient, and for want of them, our Artificial ones may be taken.

Remedies in a more cold temperament.

If that for the reaſons above-recited, more hot Medicines are to be preſcribed, you may proceed according to the following method.

Electuaries.

Take of the *Conſerves of Roſemary*, of the *yellow* of *Oranges*, and *Lemmons*, each ℥ ii. of *Lignum aloes*, of *yellow-ſanders*, of the roots of *ſnake-weed*, *Contrayerva*, *Angelica*, *Cocowpint*, each ʒ i. of the *vitriol of ſteel* (or of *ſteel* prepared) ϑ iiii. of the *ſalt of wormwood*, and *Scurvy-graſs*, each ʒ i. with what will ſuffice of *candied Wall-*

nutts,

nuts, make an Electuary: Let it be taken twice in a day, to the quantity of a nutmeg, drinking after it a doſe of appropriate Liquor.

Take of the *Roots of male-Peony*, *Angellica*, and *red Coral* prepared, each ʒ ii. of *Sugar* diſſolved in the water of *Snales*, boyled to the conſiſtency of Tablets, ℥ vi. of the *oyle of Amber* lightly rectified, ʒ ß. make a ſufficient quantity of *Lozenges*, each weighing about half a dram, take one or two twice or thrice a day, drinking after it a doſe of proper Liquor. *Tablets.*

Take of the *Roots* of *Virginian Snake-weed*, *Contrayerva*, *Valerian*, each ℥ ii. of *red Coral*, and prepared Pearl, each ʒ i. of *winteran Bark*, and of the *root of Cretian Dittany*, each ʒ i. of the *Vitriol of Steel*, and *Salt of wormwood*, each ʒ ii. of the extract of *Centaury* ʒ ii. of *Ammoniacum* diſſolved in hiſterical water, what will ſuffice, to make a pillulary maſs: of which take four pills, in the morning, and at four in the afternoon. *Pills.*

Take of the *Spirits of harts-horn*, or *Sut*, or *humane Blood*, or of *Sal ammoniack*, what will ſuffice, take of them from 10. to 12. drops, morning and evening, in a ſpoonfull of Julap, drinking a little draught of the ſame after it. *Spirits.*

Take of the *Leaves of Betony*, *Vervine*, *Sage*, *Lady-ſmocks*, *Cocowpint*, *Burdock*, each two hand-fulls, of *green wallnuts*, number 20. the *rinds* of ſix *Oranges*, and of 4. *Lemons*, of *Cardamums*, and *Cubebbs*, each ℥ i. being cut and bruſed, pour on them of whey made of *Cider* or *white wine*, ſix pints, let them be diſtilled according to Art. The doſe ℥ ii. or iii. twice in a day, after a doſe of a ſolid medicine. Add to i. quart of this liquor ii. drams of our *Steel*. *Diſtill'd waters.*

Take of the *Water of Snailes*, and of *earth-worms*, each ℥ vi. *walnuts ſimple*, ℥ iiii. of *Radiſh* Compound: ℥ ii. of *white ſugar* ℥ ii. make a Julap. The doſe 4. or 6. ſpoonfulls, twice in a day, after a doſe of a ſolid medicine.

Take of *millipedes* or *cheſslogs*, cleanſed, i pint, of *Cloves* cut, ʒß. put to them i, quart of *white-wine*, let them be diſtill'd in a glaſs-Cucurbit. The doſe ʒ i. to ʒ iß, twice in a day.

For poor people, medicines eaſie to be prepared, may be preſcribed after this manner.

Take of the *Conſerves* of the *Leaves of Rue*, made with an equal part of *ſugar*, ʒ vi. take of it the quantity of a *nutmeg*, twice in a day, drinking after it of the decoction of the *Seeds* and *Roots of Burdock*, in *whey* or *poſſet-drink* made of *white-wine*.

Or there may be prepared a Conſerve of the *leaves* of the *Tree of Life*, with an eqnall part of Sugar: doſe ʒß. to ʒ i. twice in a day.

Take of *millipeds* prepared ʒ iii. of *ameos ſeeds* ʒ i. make a powder, divide it into 10. parts, take a doſe twice in a day, or 12 *Sows* or *woodlice* bruſed, and white-wine, put to them, let the juce be wrung out, make a draught, let it be taken twice a day.

In the mean time, while theſe Medicines are taken Inwardly, it is ſometimes convenient to raiſe bliſters, with Veſicatories, in the nape of the neck and behinde the ears; for ſo the ſerous and ſharp humours, are very much brought away from the head: beſides, ſneezing powders, and ſuch as purge Rhume from the head, often give ſignal help. The taking away of Blood from the Sedal veins, or the foot, ought ſometimes to be itterated; yea, and the Diſtemper urging, *Plaiſters* or *Cataplaſms*, are profitably applyed to the ſoles of the feet. It is alſo beneficial to apply drawing medicines, about the calves and thighs.

CHAPTER VI.

Of Convulſive Motions, whoſe cauſe ſubſiſts about the extremities of the Nerves, or within the nervous foldings.

SOmetimes Convulſive diſtempers do ariſe, without any fault in the Head, by the irritation and exploſion of the ſpirits, remaining about the extremities of the nerves, which plainly appears, becauſe, when medicines haul ſharply the Ventricles or Inteſtines, or worms gnaw them, there do not only follow Convulſions

ſions in thoſe parts, but beſides, convulſive motions do ſometimes torment (or are retorted on) the members, and outward Limbs: for indeed, as we have ſhown elſewhere, when the ſenſe of a very grievous Trouble torments any part, and from that is communicated to the chief Senſorie, preſently from thence, an involuntary, and irregular motion, is wont to be reflected on the ſpirits in that place irritated; and that not only by the ſame nerves, to which the ſenſe of the pain was carried, but ſometimes alſo the Convulſion is reciprocated, by others, either neighbouring, or altogether extraneous: So the Stone being fixed in the Ureters, and irritating very much its nervous *fibres*, excites Convulſive motions, not only in the diſtemperd Veſſell, but almoſt in all the *Viſcera* of the Abdomen; So that, the urine being ſuppreſſed, Torments diffuſed here and there, and very often horrid Vomitings follow. Wherefore, 'tis not at all to be doubted, but that both diſeaſes, and ſome Convulſive Symptoms, are very often induced, by reaſon of an outward hurt, brought to the Tops of the Nerves, terminating within the membranes, muſcles, or *Viſcera*: yea, in the hyſterical, *hypochondriacal*, and certain other paſſions, if at any time Convulſive motions are excited, in the hurt head, by the fault of the womb, ſpleen, or other Inward; verily they ariſe by this only means, to wit, by the Trouble of the reſt of the parts, being tranſlated this way through the Nerves, (but in no wiſe, by the Vapours) to the brain, and are propagated, all about, into various Regions of the Body.

Convulſions begin from the ends of the Nerves, both by reaſon of irritation.

But it ſhould here be noted, that although the evident Solitary cauſe, foraſmuch as it is ſtrong and vehement, may ſometimes induce Convulſions of it ſelf, and without a prævious diſpoſition: becauſe indeed the Animal Spirits being irritated, beyond meaſure, begin greater and more than ordinary exploſions, as in overgreat purging, and Vomiting, and the fits of the Collick, and Stone, is ordinarily wont to happen; yet in many other Convulſive Diſtempers, whoſe fits are often and habituall, beſides the irritation made, about the extremities of the nerves, which ſerves for the moſt part for the evident cauſe, alſo a certain more remote cauſe is preſent, to whoſe efficacy the aſſault of the diſeaſe is chiefly beholden; to wit, when Convulſive motions are wont to be excited, and at every turn repeated, by the fault of the Spleen, womb, or other private part, it may be ſuſpected, that the animal Spirits, of the *Fibres* in the diſtemperd part, and thoſe diſpoſed in its neighbouring parts, had firſt contracted an heterogeneous, exploſive *Copula*, by which being filled, to a running over, they were provoked, by a light occaſion, to Convulſive exploſions: Then, thoſe being firſt begun, about the extremities of the nerves, creep upwards by the paſſage of the ſame nerves, and are often caryed to the ſame nervous origine, and ſometimes beyond, to the middle of the brain: from whence, laſtly, being reflected, on the nervous ſtock, they alſo ſecondarily, cauſe the Convulſions of the members, and Limbs: But after the Brain, and a Superior portion of the nervous Syſtem, are wont to ſuffer, and be affected often, by the Convulſions below excited, the ſpirits inhabiting thoſe parts, alſo begin to be themſelves adulterated at length, and to admit an heterogeneous and exploſive *Copula*, and ſo to acquire, in part, a procatartick cauſe; hence at length, a Convulſive procatarxis or more remote cauſe, becomes Common to either end of the Trunk of the ſame nerves, and the animal ſpirits of one nerve, or more, being evilly diſpoſed, both at the head and tail, conceive exploſions from either part, and deliver them preſently to the other, as ſhall be more largely declared below, when we treat particularly of hyſterical, and other paſſions. in the mean time, we will add ſome hiſtories, and obſervations, of Convulſions, ariſing from the farther ends, or extremities of the Nerves.

And by reaſon of an Exploſive Copula.

1. Obſervation.

A fine maid, about the 16*th.* year of her age, falling from her horſe, and lighting upon a Stone, grievouſly hurt her left breaſt, from whence a Tumor aroſe, with pain, which Symptoms notwithſtanding by the uſe of medicines, at the beginning ſeem'd to be mitigated, and to be indifferently well, for a long time after. Three years after, ſhe having taken cold, and having obſerved but a bad courſe of dyet, all things began to be exaſperated, the hurt part ſwelling into a bigger bulk, troubled her with an accute, and almoſt continual pain, that the ſick Virgin, for the cruel torment, could take no reſt, for many days and nights, neither could ſhe ſuffer the *glandula's* of her Breaſt, being then made more tumid, to be either touch'd or handled, yea nor any noyſe, or ſhaking to be made in the Chamber.

When

When to this Tumour, about to degenerate into a Cancer, they had applyed fomentations, and Cataplasms of *hemlock*, and *mandrake*, and other stupifying and repercussing things, this gentlewoman began to suffer certain Convulsive affections, infesting her very often: At first, as often as the pain in her breast did most cruelly torment her, she felt in that place, prickings, also convulsions, and contractions, running about here and there: then presently her *Ventricle*, and *hypochondria*, and often the whole *Abdomen*, were wont to be inflated, and very much distended, with an endeavour of belching, and Vomiting; by and by, the same distemper, being leasurely translated to the superior parts, excited Insensibility; to which shortly after, Convulsive motions succeeded,, in the whole Body, so strongly, that the Sick party could scarce be held, by three or four strong men.

These kinde of fits, at first were wandring, and only occasionally excited: to wit, they would come, as often as the pain of her brest was strained, by some evident cause: Afterwards, these Convulsions did more often infest her, and at last, they became habitual, and periodical, twice in a day, to wit, they were wont to come again constantly, at so many set hours after eating: And when after this manner, the sick Gentlewoman, had been miserably afflicted, for six months, at length, she began to be molested with a vertiginous Distemper of her head, exercising her almost continually: for which evill, when a fomentation of aromatick and cephalick herbs, had been a good while administred to her head, she became better, as to the giddiness; but then she was perpetually infested, with a quite new, and admirable Symptom, *viz.* an empty cough, without spitting, night and day, unless when she was overwhelmed with sleep: After this worthy Virgin, had tryed without much benifit, diverse medicines and remedies, prescribed by several Physitians, she was at last helped, by making use of the most temperate Bath, at the *Bath*; then being presently married, after she had conceived, and was brought to bed, she by degrees grew well.

If the reasons of the whole disease and its Accidents, be inquired into, without doubt, the convulsive distemper, was first of all excited from the tumour, or pained place of the breast; the cause of which was, partly the most sharp sense of pain, being impressed from its *fibres* and nervous parts, but partly by the heterogeneous Copula, being affixed on the spirits inhabiting those *fibres* and nerves; for truly, it may be suspected, that the most sharp humour impacted in the Tumor, which perhaps had in some sort flowed thither, by the passages of the Nerves, being repercussed, by the use of Topicks, had entred the *fibres* and nervous filaments, or little strings disposed thorow the whole border or neighbourhood, and so the heterogeneous, and explosive Copula, had clove to the spirits; for the shaking off of which, as often as by pain they were excited, they entred into convulsive explosions, and together with them, other spirits flowing within the neighbouring Nerves, by consent of the forms (as it often happens) were exploded after the same manner: Then the convulsive distemper, when it first had begun in the extremities of the Nerves, being continued thorow their passages, even to the head, was wont to cause the insensibleness, and from thence, leaping back upon the whole *nervous system*, the convulsive motions, of the Limbs and all the members: The fits, about the beginning of the sickness, being excited after this manner, by reason of pain, from the distemper'd part, were carried secondarily to the brain, and its appendix: But afterwards, when the spirits inhabiting those places, being often explosed, by sympathy, had so loosned, and weakned the pores of the containing parts, that there lay open a passage, within the same, for all heterogenious particles to enter, with the nervous juce, the convulsive *procatarxis* or more remote cause, also increased in the head; and the spirits inhabiting the *Encephalon*, being infected with an heterogenious Copula, they themselves begun the convulsive fit, or at least afforded the first instinct to its assalt, which did return, for the most part, at such set hours after eating, because the morbific matter, was carried in, together with the nervous juce, almost in an equal dimension: In truth, in such cases, where the convulsion being generall, doth possess almost all the parts of the whole *nervous system* successively, we may suspect, that the animal spirits, had contracted an heterogenious and explosive Copula, in the whole nervous stock, which, when it is arisen, at the set time, to a fullness, incites the spirits themselves, at the appointed time, in like manner

The reason of this.

ner to exploſions, and the ſame exploſion, being begun ſomewhere, is propagated in order, to all, after the manner of a fiery enkindling.

As to that empty cough, which ſucceeding the fomentation of the head, exerciſed this ſick perſon allmoſt inceſſantly for many months; it ſeems, that this Symptom ſhould depend altogether from the *nervous origine* being diſtemper'd, and not at all ou the ſtuffing of the Lungs, for ſhe did not avoid any thing with the cough; and if at any time that force of coughing was violently reſtrained, preſently ſhe was troubled with the ſenſe of choaking in her Throat: So that, as it is very likely, the morbific matter laid up near the *nervous origine* being rarified and ſtirred, by the fomentation, entred more deeply the heads of the nerves, appointed for the Lungs, and ſtirred up in their *fibres*, and *filaments*, perpetuall convulſions: after the like manner, as when the nervous juce, which waters the *fibres*, and tendons of the Muſcles, being made ſharp, and degenerate, induces to thoſe parts, continual leapings and contractions: hence, when a Convulſion or ſpaſm was ſtop'd, in ſome branches of the diſtemper'd Nerves, ſo as ſhe could not cough, preſently the Convulſive motion, running into other branches, of the ſame neighbour Nerve, ſtirred up that choaking in the Throat. I will here propoſe another example of a Convulſion, ariſing from the extremities of the Nerves being affected.

2. *Obſervation.* A noble Matron, of fifty years of Age, after her courſes had left her for about half a year, began to complain, firſt in a pricking pain of her left pap, then afterwards, that diſtemper leaving her, ſhe was ill about her ventricle, for there aroſe an hard, and as it were a ſchirrous Tumour, with a ſad pain; upon this came an inflation of the ſtomach, with difficulty of reſpiration, a nauſeouſneſs, and frequent Vomiting: Then the diſeaſe encreaſing, with a more ſharp pain running about here and there, ſhe fell into Convulſive diſtempers of the ventricle: to wit, in that place, ſhe was allmoſt continually troubled, with Convulſions variouſly running about, juſt as if her ventricle had been torn to pieces: Beſides a conſtant perturbation of minde, with thirſt, and watchings, and a freqnent *deliquium* of ſpirits, as if ſhe had been juſt dying, exerciſing this ſick Lady: All which ſymptoms, ſhe plainly perceiv'd to ariſe, from that Tumour in her ventricle: They ſaw that all vomitory, cathartical, antiſcorbuticall, and hyſterical Medicines, did her no good, but were rather hurtfull, and troubleſome; ſhe received ſome benefit, by the taking away of blood by Leeches, and by the uſe of Aſſes milk, and afterwards ſhe was much eaſed, by the long drinking of ſpaw-waters.

The reaſon of it. The aforeſaid Symptoms, which commonly are aſcribed to the hyſterical paſſion, and the vapours from the womb here plainly appear, to have proceeded from a Tumour, ariſing about the bottom of the ventricle: for that the blood of this Lady, being very hot, and melancholick, when it could be no more purged, by her courſes, flowing from her, it laid up its recrements, and aduſt fæculencies, at firſt in her breaſt, and then from a new beginning, in the membranes of her ſtomach: From the tumor there made, ſharp and heterogenious particles falling down perpetually, entred the *fibres* and nerves, planted round about; which cleaving continually to the ſpirits, dwelling in, and flowing into thoſe parts, excited them to frequent exploſions, and ſo made Convulſive diſtempers, in all the neighbouring parts: But that ſometimes the convuiſive motions were more light in that place, hence it appears, that the whole nervous ſtock, and the head it ſelf (as is wont to be in greater convulſions) had not as yet been touched, with the ſame diſtemper: But the diſorder of ſpirits, ariſing about the parts affected, and from thence transfer'd, by a ſmaller undulation or waving to the head, and ſo only lightly diſturbing the ſpirits, inhabiting it, induced watchings, with a great heat, and perturbation of the phantaſie, what we have hitherto diſcourſed of Convulſions, from the morbific cauſe ſetling upon either end of the nervous ſyſtem, will more clearly appear, when we ſhall hereafter trear particularly of the chief kinds of convulſions, *viz.* the hyſterical, hypochondriacall, and other paſſions: In the mean time, there will be no need to add a Curatory method, for this *Hypotheſis* of convulſions, ariſing by reaſon of the extremities of the nerves being affected, becauſe the ways of curing may be better accomodated, to the paſſions of this kinde, hereafter particularly to be ſpoken of: But for the preſent, it behoves us, to proceed to the unfolding of the convulſive paſſions, whoſe cauſe, or morbifick matter, ſeems to ſubſiſt, within the nervous foldings.

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We have largely enough, in another place, diſcourſed of the nervous foldings, and in their deſcription, and uſe, we have ſhown, that 'tis very likely, the more grievous fits of convulſive motions, beginning oftentimes within theſe parts, are from thence propagated on every ſide, into the neighbouring parts, and not ſeldom to a great diſtance: at leaſt, that it ſeems much more probable, that the heterogenious and exploſive particles, after they have overcome the tract of the head, and its medullary *appendix*, and being more deeply ſlidden into the Channells of the Nerves, and their paſſages, together with the juce watering them, do ſpread their ſtores within the nervous foldings, as it were in Croſs-ſtreets, and by paths, and there ſometimes make their ſtations, untill at length, being more plentifully heaped up, they as it were with Collected forces, produce the more cruel convulſive diſtempers: This I ſay, appears to be much more probable, then (what is commonly ſaid) to ſuppoſe them vapours, ariſing from the womb, ſpleen, ventricle, or any other inward, in which all the fault is eaſily thrown: For within theſe foldings, there are ſpaces large enough, for morbific mines, that the matter may be there at leaſure laid up, and remain, till it be gathered to a fullneſs: But then, becauſe we believe, that great plenty of ſpirits lodge there, more than in any other little cells, the heterogenious *Copula* growing to them, lays as it were tinder for more grievous exploſions, ſo that, the ſpirits being exploſed within theſe bodies, do not only inflate, and dilate them, but elevate and lift them up, from their Place (even as a houſe blown up with gun-powder;) wherefore the parts lying over them, are ſuddenly lifted up into a tumour, and looſe are drawn violently hither and thither. That after this manner, the more cruell fits of Convulſions, about the *præcordia*, and *Viſcera*, are very often ſtirred up, I have found to be true, beſides the Arguments taken from reaſon, not long ſince by my own ſight: For when I opened the dead body of a Gentlewoman who had been exceedingly troubled with (as they ſay) the Mother fits, or hyſterical Diſtempers, I found the womb wholly faultleſs, but the Nerves near the foldings of the *Meſentery*, (as it ſeem'd) only to be lifted up, and elevated into a bulk, and the membranes of that inward, appeared torn, and looſned one from another, as being on every ſide tumid, and looſe, as it were blown up into little bubbles, or bladders.

That the nervous foldings is the ſeat of Convulſive matter.

Indeed there are more conſiderations of ſolid reaſons, whereby we are induced to believe, that the paſſions called hyſterical, do moſt often ariſe, from the convulſive matter, heaped up within the *Meſenterick* enfoldings, and by turns exploſed: which ſhall be more clearly manifeſted, where we treat eſpecially of thoſe diſeaſes: But, neither is it leſs probable, that the Collick-pains, do very often proceed, from a more ſharp and irritative matter, contained in the ſame enfoldings. Beſides, as often as the convulſive fits ſeem to begin from the ſpleen, or ventricle, by reaſon the beginnings of which are inflations, and very great diſturbances of thoſe parts, it is likely, that the neſt of the convulſive matter, was hid within the nervous enfoldings, belonging to the ſpleen or ventricle: Alſo, this kinde of matter, ſeems to excite within the Cardiac foldings, moſt heavy tremblings, and paſſions of the heart; and within the pneumonic, or cervical, (or thoſe belonging to the Lungs and throat) enfoldings, moſt terrible fits of the Aſthma. In our Treatiſe of the Nerves, we have related a notable caſe, of a worthy Gentlewoman, to whom a ſerous matter, wonted to diſtill from the forepart of her head, through her left noſtrill, fell down behind her ear: where, when the moſt cruel pain did infeſt her, Convulſions alſo, and admirable contractions followed: whereby the joynting or compaction, now of the brain, and the whole head, ſeem'd to be pulled downward, now the throat, *præcordia*, and *Viſcera* upwards: which kinde of Convulſions, vexing the parts ſo oppoſite, and at ſuch diſtance, by turns, when they did proceed from one and the ſame ſeat, of the diſeaſe, planted in the midſt, it will be obvious to conceive, that the grieved place, as the origine of either convulſive affection, was the ganglioform enfoldings, planted near the *Parotidæ*, or the two chief *Arteries* of the throat: into which, the Nerves both of the wandring pair deſcending from the head are entred, and out of which the ſhoots do ſtretch themſelves, into the muſcles of the throat and branches, into the *præcordia*, and *viſcera*. Further, from the ſame cauſe, to wit, the convulſive matter, heaped up, and by turns exploſed, within the ganglioform enfoldings, we think, (and not undeſervedly) that ſenſe of

3. Obſervation.

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choaking in the Throat, ſo often excited in the convulſive fits, did proceed. But there will be a more fit place, to ſpeak of this, when we ſhall particularly handle, the convulſive diſeaſes, and ſymptoms. We ſhall now endeavour, to ſearch into what remains, of the laſt kind of Convulſions, of which we made mention above, to wit, which relies on the nervous Liquor being infected, thorow its whole maſs, with heterogenious and exploſive particles, and for that reaſon, irritateing the whole proceſſes of the Nerves, and the nervous bodies, into univerſal Spaſms, or Convulſions; and thoſe either continual, or intermitting.

CHAPTER VII.

Of Convulſive Motions, ariſing from the Liquor watering the nervous Bodies, and irritating their whole proceſſes into Convulſions.

THat Convulſive diſtempers do ſometimes wander thorow the whole nervous ſtock, and infeſt now theſe parts, now thoſe, now many together, is ſo noted, and obvious almoſt to dayly experience, that nothing can be more: we may therefore take notice, in theſe, that the tendons of the Muſcles, do every where leap up, and are drawn together with ſpaſms; in others, ſome exterior members, are bended, or ſtretch'd forth, with various flections, and contortions, here and there, after divers manners, we have ſeen ſome, forced by the unbridled, and untamed force of the ſpirits, as if ſtruck with madneſs, to run, or leap about, or ſtrongly to ſmite, with their feet, or fiſts, the earth, or any objects: which if they ſhould not do, forthwith they would fall into ſwooning fits, and horrid Eclipſs of ſpirits. It would be too tedious, to enumerate all the caſes of univerſal Convulſions, wandring thorow the whole nervous ſtock: But the ſymptoms of this kind, tho they are various, and manifold, may be reduced nevertheleſs to three chief Heads; to wit, foraſmuch as they depend chiefly upon three kindes of cauſes; for indeed, in theſe wandring Convulſions, we ought to ſuppoſe, the whole nervous Liquor to the vitiated, and the animal ſpirits, flowing every where in the ſame, to be adulterated, and for that reaſon, to be allmoſt perpetually exploded: Take notice then, that this kinde of Infection, is moſt commonly impreſſed on the nervous juce, and the ſpirits every where flowing in it, by one of theſe three ways, *viz.* 1ſt. By Poyſons or witchcraft. 2dly, From malignant, or ill-cured ſeavours, in which the morbific matter is poured forth, on the Brain, or nervous ſtock. Or 3ly, when the nervous Liquor, by a long tract of time, by reaſon of the ſcorbutic, or otherwiſe vitious diſtemper, doth degenerate from its due conſtitution, into ſour, or acid, or any otherwiſe præternatural, and Convulſive Liquor: we will here conſider of each of the aforeſaid caſes, and firſt of all, of the fits of Convulſion, which are produced by poyſons, or Sorceries.

Chiefly three kinds of cauſes of univerſall Convulſions.

From poyſons and ſorceries.

From poyſons of the rank of vegitables.

From a mad Dog.

Firſt therefore, it is ſomewhere ſhown by us, that ſome poyſons, do act rather on the nervous Liquor, than on the blood, which depraving it, moſt ſtrongly induce Convulſive diſtempers: And it appears clearly, from the eating of *Hemlock*, the *laughing-Parſly*, *man-drakes*, the furious *nightſhade*, *wild Parſnips*, and other hurtfull herbs, how ſoon after, horrid Contractions of the *Ventricle*, *numbneſs*, *delirium*, Convulſions, twitches of the *tendons*, in the whole body, were wont to follow: Beſides, thoſe kinde of Convulſions follow upon the biting of a mad Dog, and other venomous beaſts, where the Virulent infection, being received by the nervous juice, and lurking a long while in it, at laſt puts it ſelf forth, and infects, and poyſons, the whole maſs of Liquor, in which it was involved, with its ferment. But what doth yet more illuſtrate it, are the admirable Symptoms, the truly painfull Convulſions, and unweariable dancing, which Authors have related to follow, upon the biting of the *Tarantula*: and indeed, might ſeem fabulous, unleſs that the truth ef the Thing were aſſerted, by many men of good Credit, both ancient and modern: For beſides *Mathiolus*, and *Epiphanius*, *Ferdinand*, *Gaſſendus*

ſendus, and *Kircher*, add, that themſelves were eye-witneſſes, of this diſtemper: yea it is ſaid, 'tis a known thing in *Apulia*, and found almoſt by dayly experience, that in that part of the Country, there are *Phalangii*, or a certain kinde of Spider, which is called *Tarantula*, from *Tarenta*, an ancient City of *Apulia*. This little Animal, being very frequent in the Summer, often bites the heedleſs Countryman, and infects him with its Venemous ſtroke, from whence preſently ſucceed, a pain in the hurt part, with a Tumor, and itching, by and by, in various parts of the body, a numbneſs, and Trembling, alſo Convulſions, and looſnings of the members, and other Convulſive Symptoms, with a great loſs of ſtrength; as may be collected from *Mathiolus*, *Ferdinand*, and others, relating the wonderfull effects of this Diſeaſe. But truly, what theſe Authors ſay concerning the cure of this Diſtemper, and is practis'd commonly thorow the whole Country, is worthy of great admiration: for thoſe ſtung with a *Tarantula*, as very ſick as they are, as ſoon as they hear muſical Inſtruments, preſently they are eaſed of their pains, aud leaping into the middle of the room, they begin to dance, and jump about, and ſo continue it, a long while, as if they were well, and ailed nothing: but if it happen, that the Fidlers leave off never ſo little a while, they ſtraitways fall to the ground, and return to their former pains, unleſs by the inceſſant muſick they dance, and leap, till the poyſon be wholly ſhaken off: For this end therefore, Muſitioners are hired, and are changed by turns, that without intermiſſion of the noiſe, thoſe who are bitten, may dance ſo long, till they are quite cured. Thus ſaith *Mathiolus*: to which *Ferdinand* adds, that poor people do expend almoſt all their ſubſtance, in theſe fidlers, and muſitians, who wander up and down all that Province; and by playing to theſe *Tarantulaſized* people, make much benifit: they dance or leap about, in the villages, and publick ſtreets, and fields, ſome one day, ſome one week, and others more. To theſe Authours, the moſt learned men *Gaſſendus*, and *Kircherus* agree, both of which, have related it from their own obſervation, that they have known ſuch affected; and they aſſert, that they are not affected, or excited, indifferently with any muſick, but with certain kinds of Tune, and that they dance to ſome meaſures, before others.

The reaſon of the ſymptoms of thoſe bitten by a Tarantula.

Let us inquire a little further, into the Reaſons of theſe aforeſaid Accidents, if we may follow our conjecture, in this firſt place, 'tis without doubt, that a certain venemous infection is fixed on the humane body, from the bite of this little creature, which tho it being leſs infeſtous to the blood, and vital ſpirit, as ſoon as ever it paſſes from it, into the nervous Liquor, it preſently unfolds it ſelf, thorow its whole maſs, like leaven, and infects the animal ſpirits, flowing every where in it; ſo that indeed, they being drawn one from another, and here and there inordinately moved, induce convulſive diſtempers, which are accompanied now with the contractures, now with the languiſhing, and reſolutions or looſning of the containing parts.

In what the reaſon of the Muſicks allaying the ſymptoms conſiſts.

But why the painfull Convulſions, which are raiſed by the bite of the *Tarantula*, being preſently allayed by muſick, are wont to turn into dancing, does not ſo plainly appear. That ſome affirm, this little animal (for that by the teſtimony of *Ariſtotle* it ſhould be moſt wiſe) to be delighted with muſick, and for that reaſon, its venom being impreſs'd on man, by fermenting the humours, to induce the like love of muſick: I ſay, this conjecture will not ſatisfie a minde deſirous of Truth, becauſe, that ſuppoſes a muſick-loving nature in the ſpider, aud the ſame to be communicated to man, by a *mataſtaſis*, or as it were a certain *metempſychoſis*, or tranſmigration of ſoul, both which are taken upon truſt, and little ſatisfactory, but it may be rather ſaid, that the venome inflicted on the nervous liquor, by the bite of the *Tarantula*, is too gentle, to be able to extinguiſh wholly the Animal ſpirits, or to diſſipate them very much aſunder, and to compell them into more cruell exploſions, but only to put them to flight, and to incite thoſe flying here and there, into lighter, and ſomewhat painfull Convulſions; and that the Muſick, with its flattering ſweetneſſe, doth congregate together, and mutually aſſociate, with eaſe, the ſpirits ſo diſſipated: wherefore, whenas the ſame ſpirits, by reaſon of the Infection ſticking to them, are apt to involuntary and Convulſive motions, the melody diſpoſes them, delighted together, and directs them to ſuch Convulſions, that entring the bodies of the nerves, by a certain Courſe, and Order, they are carried as it were in certain preſcribed limits and compaſſes, until at length the particles of the venome, being quite evaporated,

and

and the fury and rage of the ſpirits being worn out, they wholly ſhake off that madneſſe. For truly, muſick doth eaſily carry men ſound and ſober, whether they will or no, or thinking of another thing, into actions anſwerable to the ſound of the harmony; that preſently the ſtanders by, at the firſt ſtriking up of the Fiddle, begin to move their hands and feet, and can ſcarce, nay are not able, to contain themſelves from dancing: Let none therefore wonder that in men bitten by the *Tarantula*, when the animal ſpirits being moved, as it were with goads, they are compelled to leap forth, and wander about hither and thither willingly, if they are excited to dancing, and compoſed meaſures, at the ſtroke of an harp; ſo that as in theſe diſtempers, the ſpirit of the muſick, as it were inchanting the outragious ſpirits, and in ſome meaſure governing, and changing their convulſive motions, ſerves inſtead of an Antidote: for that the animal ſpirits, being very much, and for a long while exerciſed, after this manner, wholly ſhake off the Elaſtic *Copula*, contracted by the poyſon, or otherwiſe; and they being very much wearied, at length reſt from that madneſs, or its incitation.

A deſcription of the dance of St. Vitus.

That which is called the *Dance of* Saint *Vitus*, is an evill akin to this, concerning which *George Horſtius* relates, that he had ſpoken with ſome women, who for ſome years, viſiting the ſhrine of St. *Vitus*, which is in the borders of *Ulme*, did there exerciſe themſelves, even night and day, with dancing and diſcompoſure of minde, till they fell down like people intranc'd: by which means, they ſeemed to be reſtored to themſelves, that they felt little or nothing for a whole year, till about the time of *May* following, when by the inquietude of their members, they ſay'd, they were ſo far tormented, that they were forced to go for their health ſake, yearly, to the aforeſaid place, about the feaſt of St. *Vitus*. *Horſt. Epiſ. Med. ſect.* 7. *de admirandis Convulſionibus.*

The reaſon of it.

Indeed it is a uſuall thing (as I have obſerved) both for men, and women, to be ſometimes tormented with this inquietude of their members, and as it were with a fury or madneſs, that they have been forc'd to walk, till they were tyred, as alſo to dance, leap, and run about, here and there, that by this means they might ſhun the grievous trouble, and ſometimes faintings away, which were about to invade them: The reaſon of which ſeems to be, that the animal ſpirits, forasmuch as they being incited, by an heterogenious *Copula*, in the whole nervous kinde, become fierce, and altogether unbridled, which ſo to exerciſe, and tire out, there is need, both that they themſelves may be tamed, and that the exploſive *Copula*, may be ſhaken off.

Univerſall Convulſions from Witchcraft.

That Convulſive diſtempers are ſometimes excited by witch-craft, is both commonly believed, and uſually affirmed, by many Authors worthy of credit: and indeed, as we do grant, that very oftentimes, moſt admirable paſſions, are produced in the humane body, by the deluſions of the Devill, foraſmuch as he, to cauſe wonders, by which he might rule, by the ſubtletie of working, inſinuates to the ſenſitive ſoul, or the conſtitution of the animal ſpirits, heterogeneous Atoms, or little Bodies, and ſo adds now ſpurs or pricking forward, and now caſts chains on its functions, and now carries them to miſchief: alſo by ſome means he enters himſelf into the humane body, and as it were another more mighty ſoul, is ſtretched thorow it, actuates all the parts, and members, inſpires them with an unwonted force, and governs them at his pleaſure, and incites to the perpetrating of moſt cruel, and ſupernatural wickedneſſes: yet all kinde of Convulſions, which beſides the common manner of this diſeaſe, appear prodigious, ought not preſently to be attributed to the inchantments of Witches, nor is the Devill preſently or allways to be brought upon the ſtage. For indeed, as often as a childe, or relation, of ſome man of the richer ſort, is by chance taken with moſt cruell, and unuſuall Convulſions, for the moſt part, it falls out, that by and by the next old woman is accuſed of witchcraft, ſhe is made guilty, and very hardly, or not at all, the wretch eſcapes the flames, or an halter; when in the mean time, the diſeaſe, proceeding from cauſes meerly natural, may be eaſily Cured, by no other Exorciſm, than Remedies uſually preſcribed againſt convulſive diſeaſes: In truth, the animal ſpirits being indued, with a more cruell exploſive *Copula*, and being ſtrucken by it all of a heap together, obtain ſo much ſtrength, and vigour, beyond their proper and wonted power, as the flame of gunpowder, has above the burning of the common flame; ſo that thoſe, who obnoxious to this diſeaſe, out of the fit, may be govern'd, lifted up, and moved at pleaſure, with the light help

Which are commonly but falſly ſo thought.

The reaſon of them.

help of one man; when the ſame is upon them, make nothing of the utmoſt endeavours, and force, of at leaſt four of the ſtrongeſt men: But if in the caſe of any one that is ſick, there ariſe a ſuſpition of witchcraft, or faſcination, there are chiefly two kinds of Motions, that are wont to create, and cheriſh this opinion, *viz.* 1. If the patient doth perform the contortions, or geſticulations of his members, or of his whole body, after that manner, which no ſound man, nor mimick, or any tumbler can imitate. Then 2dly, If ſuch ſtrength be ſhown, that ſurpaſſes all humane force; to which, if the avoiding of monſtrous things happen, as when bundles, as *Henry van Heers* relates, are caſt forth by vomit, or a live Eel, as *Cornelius Gamma* tells, voided by ſtool, without doubt, it may be believed that the devill has, and doth perform, his parts in this Tragedy. *Which argue witchcraft.*

It were eaſie to heap together, very many, and indeed admirable hiſtories, of perſons of every Age and Sex, affected after a ſtupendious and as it were ſupernatural manner, with the manifeſt ſuſpition of witchcraft: for ſuch are every where extant, among Authors, both Phyſitians, and Philoſophers; and becauſe vulgar rumour, noyſes about diſeaſes, cauſed by witchcraft, to happen often in allmoſt every Country: but becauſe theſe kinde of caſes, are full of Impoſture, or allways increaſed, by the fictious lies of the relators, to create admiration, (and for that they rarely fall under the medicall cure) I will here purpoſely omit them: what remains is, that I proceed to unfold, the next kinde of univerſal Convulſions, to wit, which comes upon malignant, or otherwiſe irrigular, or ill-cured Feavours.

CHAPTER VIII.

Of Univerſal Convulſions, which are wont to be excited, in Malignant, ill-cured, and ſome irregular Feavours.

THat Convulſions ſometimes happen to perſons ſick of Feavours, almoſt every ordinary body underſtands, and from thence takes a remarkable Prognoſtication, of Death, or perill: For in malignant Feavours, alſo ſometimes in the ordinary ill-handled, as the *Virtego*, or *Delirium* ariſe, from the morbific matter being layd up in the Brain, from the Blood; ſo from the ſame, being ſlidden down into the nervous ſtock, Contractures and twitches of the muſcles, and tendons; alſo ſudden ſhakings of the members, and Limbs; and ſometimes moſt horrid ſtiffneſſes, in the whole Body ſucceed: The reaſon of which kinde of Symptoms ſeems to conſiſt in this, that the Liquor watering the nervous parts, abounds every where with heterogeneous particles irritating the Spirits: for by that means, the Spirits inhabiting, and influencing, being diſturbed in their juſt Influence, and emanation, are incited into continual exploſions, as it were a crackling noyſe, not much unlike, as when the flame of a Lamp, being imbued with droſſy and ſalted oyl, aſcends with a noyſe and ſparkling: which kinde of Convulſive diſtempers, for the moſt part, happen about the height of feavours, when the morbific matter, being firſt layd up in the blood, is from thence transfer'd to the Brain, and that being paſs'd thorow, and alſo infected, it is caried into the Syſtem of the nerves, and from thence ſtirs up Convulſive paſſions, with, or without a *Delirium*. *Univerſal Convulſions hapning in Feavours.* *The reaſon of the ſymptoms.*

But indeed, it is ſometimes obſerv'd, that, beſides theſe kinde of Convulſive diſtempers, coming upon Feavours, and ſecondarily excited; in a malignant conſtitution of the air, alſo from the breath of a Peſtilent Contagion, the nervous Liquor hath been infected before the blood, or elſe apart from it, and therefore a *Delirium*, or Convulſions, have gone before a feavouriſh Diſtemper. Further, I have often obſerved, that ſome irregular Feavours have aroſe, in which the blood has been hardly ſeen to boyl up, or grow hot above meaſure, but the beginnings of this ſlow and very dangerous feavour, were layd chiefly in the nervous humour; which being by degrees brought to maturity, did induce Convulſive Diſtempers, with a *Delirium*, or madneſs, and other waſtings or exorbitances of the Animal Spirits. For the ſick never complained of heat, or thirſt, being

ſoon made feeble, and as it were ſtrengthleſs, they were preſently obnoxions to frequent giddineſs, alſo to rremblings of the Limbs, and as it were leapings forth, beſides, to twitches or jumpings of the muſcles, and tendons, and to contractures, aud pains wandring about, here and there. This kinde of ſickneſs, by ſome Phyſitians, becauſe it ſeem'd to conſiſt in the ſolid parts, rather than in the blood, is called a *malignant hectick feavour*; when indeed, the ſame being fixed chiefly in the nervous humour, may be better called, the *Convulſive nervous Peſtilence*.

A deſcript on of a convulſive diſeaſe of Haſſia, *ſometimes epidemicall.*

There is mention made, by *Gregory Horſtius*, of a *Convulſive*, and *malignant Diſeaſe*, which was ſometime paſt *Epidemical*, in *Haſſia*, *Weſtphalia*, and the neighbouring Countrys: they being taken therewith, without a feavouriſh heat, immoderate efferveſcency of blood, whilſt they were imployed about their familiar occaſions, hardly perceiving themſelves to be ſick, were wont to have about their hands, or feet, and ſometimes in both, a ſenſe of tingling, with a numbneſs, running up and down: then by and by, their fingers, together with their Arms, and thighs, were now ſtrictly drawn together, now moſt ſtrongly ſtretched forth, as if they were frozen. Thoſe kinde of Contractions, and extentions, rendred themſelves by turns, and then changed places, that now the diſtemper reſided in one part, then preſently in another: But (as it often hapned) if the Diſeaſe, at once invaded the whole Brain, Univerſal Convulſions, and oftentimes epileptical Fits, infeſted the ſick: beſides, thoſe labouring with it, were obnoxious at ſome turns, to a *Delirium*, *madneſs*, and ſometimes a *Lethargie*: This ſickneſs, continued a long time, without any *Criſis*, or ſound ſolution, and could ſcarcely be ſo perfectly Cured, but that the Diſpoſition of the Brain, and nervous parts, remained evill all their Life after.

The reaſon of the ſymptoms.

As to the Reaſons of this Diſeaſe, and Symptoms, it is obvious enough, that the ſame depends altogether upon the vice, and notable depravation, of the nervous juce. That pricking, or tingling, for the moſt part, at the firſt coming of the diſeaſe, was procured for this Reaſon, becauſe that Liquor, beginning to be poyſoned, and looſned in its mixtion, by the malignant Infection, preſently it oppreſſed the animal Spirits, abounding therein, and inhibited them from their wonted, and free expanſion; wherefore, they being half overwhelmed, and conſtrained to creep, as it were among bryers, or things that catch'd hold of them, or held them back, they excited the ſenſe, as it were of tinglings running about: but then, becauſe this diſeaſe growing worſe, the nervous Liquor was yet more perverted in its *Criſis*, or diſpoſition; the heterogeneous particles, which were brought together in it, cleaving to the Spirits, cauſed them to be moved hither and thither, and to be unduly exploded; for which Reaſon, the Contractions and horrid diſtentions in the members, and the tumults, and great inordinations in the head, were raiſed up. But that in this feavour of the nerves a ſolution or difficult *Criſis*, or none at all hapned, the reaſon was, becauſe the nervous juice being ſlow, and as it were mucilaginous, and therefore heavy in its motion, was not defæcated, or cleared, as the blood, by a critical efferveſcency, nor eaſily conceived, that kinde of fermentation, by which the pure, might be ſeparated from the impure.

Indeed I have known a ſickneſs, much like to this example, to be often excited in our Country, and to invade whole families, eſpecially children, and the younger people. Some years ſince, a populary or childiſh feavour, very much infeſting the Brain, and nervous ſtock, exceedingly ſpread in this country, yea almoſt thorow all *England*: The Hiſtory of which Diſeaſe, being deſcribed in that time, in which it raged, *viz.* in the year 1661. I think it worth our pains to inſert, in this place of our Convulſive *Pathology*: For from hence, it may appear, by what means, and from what cauſes, the Convulſive Symptoms, which come upon any feavours, are wont to be excited.

A Deſcription of an Epidemical Feavour chiefly infeſtous to the Brain and nervous ſtock ſpreading in the year, 1661.

The hyſtory of an Epidemical feavour raging in the year 1661.

IN this Country, before the laſt Summer, *viz.* 1661. we had been free for above two years, from any popular diſeaſe, unleſs ſuch only as uſually come in ſome places; but then, before the Summer Solſtice, the *ſmall-Pox* (a diſtemper here rarely Epidemical) being rife in many places, raged very much: After that Summer, which was extreamly hot and dry, an Autumn moiſter then uſual followed: and after which, a moſt mild winter almoſt without any cold: in all which ſpace, the Earth was hardly covered with ſnow, or was ever hard frozen, above three or four days; ſo that within a few weeks, after the winter Solſtice, the Trees began to bud, and the vernal plants to break forth, from the boſom of the Earth, and to flower, and alſo the birds to build neſts: to this mild ſeaſon, not eventilated at the beginning of the ſpring, by the nitrous little bodys, that were wont to be blown from the North, a filthyneſs of ſhowrs, and almoſt continual wet ſucceeded. After the vernal *æquinox*, a certain irregular, and unaccuſtomed Feavour, ſeiſed upon ſome, here and there, which within a month, became ſo Epidemical, that in many places, it began to be called the *New Diſeaſe*; Raging chiefly among children, and youths; it was wont to afflict them, with a long, and as it were a Chronical Sickneſs: yea ſometimes, old men, and men of middle Age, though rarely, were ſeiſed by it, and thoſe indeed, it did ſooner, and more certainly kill. The Diſtemper at firſt invading any one, did creep on them ſo ſilently, that the beginnings of the ſickneſs, were ſcarce perceived: for ariſing without immoderate heat, or more ſharp thirſt, it induced in the whole body a great debillity, with a languiſhing of the Spirits, and a torpitude or numbneſs of the function; The Stomack was ready to loath any victuals, and to be grieved at any thing put into it, and yet not eaſie to vomit. The ſick were unfit for any motion, and only lov'd to be idle, or to ly down upon the Bed: within a ſhort time, alſo ſometime at the firſt coming of the Diſeaſe, they complained of a heavy *vertigo*, a tingling of the ears, and often of a great tumult and perturbation of the brain. Which kinde of Symptoms, were very often eſteemed, as it were the peculiar ſigne, of the approach of this Diſeaſe, if in ſome, thoſe had been wanting, or hapned to be more remiſs, inſtead of the head being affected after that manner, the diſeaſe took more deep root in the Breſt, with an excited cough, as ſhall be told by and by. But whilſt the brain, and the nervous *Appendix*, being after this manner affected, the animal Spirits, preſently from the beginning of the ſickneſs, were benummed, a ſlow and as it were hectick feavour, was inkindled throughout: but yet, the effervescency of the blood, which was hardly continual, but flitting, and uncertain, was according to the diſpoſition of the blood it ſelf, in ſome more intenſe, in others more remiſs; and therefore, thirſt, the white ſcurf of the Tongue, and other Symptoms, which accompany a feavouriſh diſtemper, did more or leſs infeſt them: ſweating did not willingly follow, nor could it eaſily, or by a light thing, be cauſed by Art: yea, neither this, nor any other evacuation, as it were critical, at any time ſucceeding, did ſuddenly help this diſeaſe; but it perſiſting for many weeks, and ſometimes months, reduced the ſick to the higheſt *Atrophie*, or waſting of all parts, and often infected them, with an incurable Conſumption.

Its procatarctick or more remote cauſe.

The ſymptoms.

About the increaſe of the diſeaſe, which hapned in moſt, within eight days, if the Diſtemper (as it was often wont) did ſettle chiefly in the head, and nervous Syſtem, moſt grievous Symtoms, in their Dominions, *viz.* a plain Phrenſie or deep ſtupidity or Inſenſibility did moleſt them. For I often obſerved, in many children, and not ſeldom in women, after ſeven or eight days from their falling ſick, that their knowledge and Speech failed them, and ſo the ſick have lain, for a long while, yea, ſometimes for the ſpace of a whole month, without any taking notice of the by-ſtanders, and with an involuntary flux of their excrements; but if they continued in ſome ſort the uſe of Judgment, and Reaſon, they laboured with a frequent *delirium*, and conſtantly with abſurd, and incongruous *Chymera's*, in their ſleep. But in Men, and others of a hotter temperament, from the morbific

bific matter, instead of a *Crisis* being translated to the brain, a Fury, or dangerous, and oftentimes deadly phrensie did succeed. But if neither Stupidity, nor great Distraction did fall upon them, swimmings in the head, Convulsive motions, with Convulsions of the members, leapings up of the *tendons*, did grievously infest them. In almost all the sick, the belly was for the most part loose, casting forth plentifully now yellow, now thin, and serous excrement, with a great stink: it was rarely that vomiting fell upon any one: The urine in the whole process of the Disease, (unless when the morbifick matter, being caried more plentifully into the Brain, did threaten a phrensie) was highly red, so that some, by reason of the deep colour of the water, judg'd this feavour to have been plainly Scorbutick: which notwithstanding appeared to be otherwise, because *antiscorbutic* Remedies, (of which indeed many, and almost of every kinde were tryed) were little or nothing beneficial. It was most of all to be admired, how soon after the beginning of this Disease, the flesh of the sick consumed, and they reduced to the leanness of a *Sceleton*, when in the mean time, there was no great heat, that might by degrees consume the solid parts, nor any violent evacuation, which might greatly take them down.

Besides these evills molesting the region of the head, a distemper no less dangerous, oftentimes fell upon the breast. For in some, tho not in all, a cough very troublesome, with abundance of spitle, and thick, was excited: this hapned in some, about the declination of the disease, to wit, whilst the confines of the brain were serene, as it were the clowds sent from thence to the thorax, a great *Catarrh* suddenly rained down upon the Lungs. But in others, who especially had little infection of the disease in the head, presently after the beginning of the feavour, a cruell cough, and a stinking spitting, with a consumptive disposition, grew upon them, and suddenly, and unthought of, precipitated the sick into a *Pthisis*: from which nevertheless, they recovered, by the timely use of Remedies, often beyond hope. It was observ'd in some, that after a long ecclips of the sensitive facultie, and oppression of the brain, from the morbific matter, at length tumors did follow, in the glandula's, neer the hinder part of the neck, out of which, being hardly ripened and broke, a thin and stinking ichor or matter, ran for a long time, and brought help. I have also seen watery pustles, excited in other parts of the body, which pass'd into hollow ulcers, and hardly curable: sometimes little spots, and *petechiales*, appeared here and there: yet I never heard, that any more broad, or blew, of these kinde, were seen in the sick. Notwithstanding, tho this feavour was not remarkable for very many malignant spots, yet it was not free from Contagion. For that in the same Family, it invaded almost all the Children, and youths successively, yea not rarely those of more ripe years, and at mens estate, who looking to the sick, were familiarly conversant in their Chambers, or about their beds, were infected with the same infection: But indeed, there was not so much cause of suspition, that for it, the friends of the sick should be wholly interdicted, from commerce with, or visiting of them.

Altho the course of this disease, (unless when it intimately settled in the brain) did appear so gentle, and continued without any horrid Symptome; yet its cure being always difficult, succeeded not under a long time: For the sick rarely grew well, within three or four weeks, yea for the most part, scarce in so many months. If this disease fell upon men of a broken Age, or strength, especially those who were before obnoxious to *cephalic* distempers, as the *Lethargie*, *Appoplexie*, or Convulsion, it oftentimes kill'd them in a short space: but if there was any hope of recovering, it could be but slowly procured, (all Remedies whatsoever scarce bringing any sensible help) so that the sick, did no sooner come out of the sphear of this disease, than they fell into the confines of a Consumption.

The reason of them.

If the formal reason, and courses of this aforesaid sickness be demanded, it here easily appears, the watering Liquor of the brain, and nervous stock, for the most part both together, with the blood, to be in fault, and the immediate cause, especially of the troublesome Symptoms: to wit, forasmuch as this water, presently after the first assault of the disease, was grown more poor then usuall, and as it were lifeless; therefore a Languishing, and enervation, with a *spontaneous* weariness, and impotency to motion, hapned in the whole body, and with a sudden wasting of the body, in the sick. Further, forasmuch as the same Liquor, was stuffed with heterogeneous particles, *viz.* partly narcotick, partly explosive,

therefore

therefore, a numbneſs, a ſenſe of pricking, leapings up of the tendons and muſcles, and contractures, alſo the *Virtego*, giddineſſe, and other more grievous Cephalick diſtempers did ariſe: Moreover, foraſmuch as by reaſon of the evil of the nervous juice, being not quickly or hardly to be mended, the cure or healing of the diſeaſe, became ſo hard, and lingring. But for that the fault of this *Latex*, neceſſarily depended on the diſcraſie or evill diſpoſition of the blood, alſo of the depraved conſtitution of the brain, what their morbid diſpoſitions were, and by what means they brought forth the beginning, or tinder of the Symptom of the feavour but now deſcribed, let us now ſee.

As to the former, it ſeems, that at this ſeaſon, by reaſon of the hot and humi'd conſtitution of the year, and no blaſt from the north (the little bodies of which imbue the blood, and juices of our body, as it were with a nitrous ſeaſoning, and by agitating them, defend them againſt putrefaction) the blood in moſt men, and chiefly in children, youths, and women, became like ſtanding-water, that ſo contracts a ſetling, very impure, ſtuff't with heterogeneous particles, and turning to a clammyneſs, and watriſhneſs; in which, the more pure ſpirit and ſulphur, being ſomewhat depreſs'd, the watery particles, being carried forth with the impure ſalt and ſulphur, were too much exalted. Wherefore the blood, both by reaſon of its *Criſis* or conſtitution, being vitiated, alſo by reaſon of heterogeneous particles, being heaped up more plentifully in its boſome, was made more fit, either of its own accord, or occaſionally, or becauſe of the contagion, to receive a feavouriſh Effervescency, ſo that from thence, very many fell at this time into feavours. But the blood growing hot, from the feavouriſh taint being received, did not preſently burn with an open flame, but like green wood laid on the fire, with a flame as it were ſuppreſſed, and much incumbred with ſmoke. Wherefore, the morbific matter, being heaped within its maſs, was not wont, (as in a regular feavour) to be conſumed by the burning, and its reliques, at the ſet time, to be exterminated by the *Criſis*: but yet, a little after the beginning of the feavour, a great portion of this matter being powred into the head, or *Thorax*, or into both at once, and afterwards being continually ſupplied in thoſe parts, it induced either the aforeſaid diſtempers of the brain, and nervous ſtock, or a cough, with a conſumptive diſpoſition, or both together, and for this reaſon, about the beginning of this diſeaſe, when a pulſe quicker than it ought to be, and a high colour'd urine, and full of contents, did ſhow the blood to grow hot with a feavouriſh diſtemper, the ſick did not complain of heat, or thirſt; becauſe the blood growing hot, did lay up its impurities, and recrements, forthwith into the proviſion of the nervous Liquor, or into the Lungs; wherefore, within theſe receptacles, the Symptoms preſently became worſe; but afterwards the diſeaſe growing on, a ſomewhat ſharp heat, with ſcurfneſs of the tongue, was wont to be troubleſome to ſome: yea, in all, a flow, and as it were hectick feavour, continued throughout; which neither by ſweat, nor by inſenſible tranſpiration, could be ſo wholly removed, but that it was daily renued, chiefly after eating, tho never ſo ſmall: which thing truly ſeem'd to happen, becauſe the nervous juice being full of the feculencies, brought from the blood, did not afterwards receive them in ſo great plenty, but that theſe recrements, together with the nutritious humour, (and for that this was not conſumed by nouriſhing the ſolid particles) remaining within the bloody maſs, cauſed it then to grow feavouriſhly hot.

2ly, Beſides this morbid diſpoſition of the blood, contracted from the intemperance of the year, it ſeems, that the brain alſo, from the ſame occaſion, was made prone to the aforeſaid paſſions. For when, for a long tract of time, the ſouthern winds did continually blow, with a moiſt conſtitution of the Air; from thence, the paſſages, and pores of the brain, being very much looſned, and opened, and its connexion too much diſſolved, they gave an eaſie paſſage, to ſerous humours, and for all ſorts of heterogeneous particles: wherefore the blood being very feculent, and watery, as ſoon as it began to grow hot from the feavour, carried its ſerous recrements and filths, preſently thorow the too open doors into the head: for whoſoever he was, who did not complain of his head, being too much ſtuffed with a moiſt air, and numbneſs of ſpirits; on the contrary, his pores being bound together, by an intenſe cold, or dryer air, all his ſenſes, and faculties, remained more quick and lively.

Theſe

These things being thus premised, concerning the morbid provision of the brain, and humours, to wit, of the blood, and nervous humour, by reason of the constitution of the year, whereby indeed, very many at that time, fell into a slow, unequal, and long continuing feavour, surrounded with *Cephalick* and *Convulsive* symptoms, and hardly curable: hence also it will be easie, to unfold the reasons, of the rest of the symptoms and accidents, chiefly to be noted in this disease.

Why this disease chiefly invaded children, women, and phlegmatick men.

For first of all, that this irregular Feavour, raged chiefly among Children, young men, women, and phlegmatick men, the reason was, because in those kinde of bodies, the blood was apt to be more wateriſh, and less perspicable, and from thence to gather a serous *Colluvies*, or watry humour, and heterogeneous feculencies; and also, the brain being more humid and weak, easily received any recrements of the bloud. Wherefore it may be observed, that those sort of persons, were found more prone to Convulsions, arising by reason of any other occasions.

The reason of the Atrophie coming upon this feavour.

Secondly, the noted *Atrophie* or leanness, came so suddenly upon this feavour, because, by reason of the depravation of the nervous juice, the officies of nourishment, depending upon it (which, as we have elsewhere shown, are highly active) presently failed. For although we do not grant, the nervous humour to be only nutritious, but to dispense thorow the Arteries, a matter destinated to the nourishable parts, prepared in the bloody mass; yet it may be lawfull to think, that the Liquor watering the brain and nervous stock, by means of an efficient cause, doth conduce very much to alimentation; for this growing turgid with animal spirit, actuates and invigorates the nutritious juice, brought to every part by the blood, and admitting it into the passages, and most intimate receptacles of the body to be nourished, and as it were leading it in, assimilates or resembles it, Wherefore, when this houshold Liquor is so depraved, that it doth not rightly supply the animal spirits, requisite about the work of nutrition, all the members and parts of the stomach vitiated in its tone, either spues back whatsoever nourishment is brought, or cannot receive it to its proper use: wherefore truly in this disease, the bulk or habit of the body, however fuller or fatter, was more sooner pull'd down, then in a continuall Feavour, where it might much more evaporate, by the intense heat, or copious sweats. The reason of which is, because in a burning feavour, altho the blood growing very hot, exhales more plentifully; yet in the mean time, it continually affords something of nourishment, which the severall parts, help'd by the benefit of the nervous juice, easily received, and assimilated; but in this nervous pestilence, altho the nutritive matter was sufficiently provided, yet by the defect of the Nourishment of the spirits, the nourishment was altogether inhibited.

Why this feavour was hardly cureable.

3. For the aforesaid reasons also, this feavour, being a long while protracted, was wont scarce ever to be critically helped, and difficultly cured, by the help of allmost any medicines: For the feavourish matter, creeping presently, from the beginning of the disease, into the nervous Liquor, could hardly afterwards, and not but of a long time, be exterminated from its bosome: for that this water, with a slow motion, and flowing leasurely in the streight vessells, does not as the blood, conceive of its own accord a purifying effervescency, or fermentation; neither can the forces of medicines, reach to it so easily, and unmixed: but either they are first hindred by other parts, or because they are heterogeneous, they are wholly excluded from the brain, casting back whatever is incongruous. In truth for this reason, all distempers of the brain and nerves, as it were making a mock at Medicines, are most difficulty cured. Therefore in this feavour, if the evill impressed on the brain and nervous stock was taken away, either a cruell cough with plentifull spitting, ot tumours, or an Impostum in the neck did follow: to wit, the morbifick matter being supped back, by the blood, and again deposited, setled either in the *Thorax*, or in the Glandula's, and emunctories, nigh the hinder part of the neck. But this disease, was the more contumacious, because the discrasie or evill constitution of the blood, was not easily mended: for altho from the beginning, its *Latex*, the recrements being poured forth, even into the nervous Liquor, grew but little and sluggishly hot; yet afterwards, these receptacles being filled, and the morbific feculencies, and besides the nutritious matter, not imployed in nourishing the parts, being resident even in the blood, did aggravate it, and for the exclusion of this trouble, not to be mixed with it,

did

did induce an Effervescency, such as is wont to be in an hectick feavour, either almost continuall, or presently apt to come again. For I have often observed in this feavour, from grewell, barly-broth, and other slender diet; no less ebulition of the blood to be stirred up, than from broth made of flesh: whether indeed the nourishing juice, supplying the blood from the chyle, because it was not imployed in the work of nutrition, carried something heterogeneous, and not rightly miscible, as a trouble to the blood; and by reason of the particles of this superfluous juice, being copiously sent away with the *Serum*, the urine became very thick, red, and very full of contents: Also, for the same reason, the belly was for the most part loose, forasmuch as the blood, filled full of the nutritious juice, did suck forth a lesser portion of the chile from the bowells, and did pour back again part of that which had been brought to it, on the intestines; the feavourish distemper did likewise stick so long in the blood, because, till the animal regiment being restored, nutrition was rightly performed, that superfluous matter was carried into the mass of blood.

We deliver the example, and the *Ætiology* or rational account of this aforesaid feavour, more largely for this reason, because the same disease, did fall upon our Countrey men, here and there also at other times: for that of late, in this City, all the younger people of a certain family, were sick of it: yea, I remember, that some time past, very many laboured with such a feavour; Out of the many histories and examples of sick people, which it rendred when it was epidemical, I will here propose one or two.

A strong and lively young man, about the beginning of the spring, 1661, falling sick, without any evident cause, without any great heat or thirst, he became suddenly weak, and as if enervated, with a dejected appetite, and languor of spirits. *Cathartick Remedies*, *Antipyretics* or allaying of heat, digestives, and also antiscorbuticks, and others of various kindes, administred by the prescriptions of the most famous Physitians, availed nothing: But notwithstanding the sick man, hitherto languishing with a slow and wandring feavour, with a quick and feeble pulse, a deep-colour'd urine, had kept his bed a fortnight; besides, being reduced to the greatest leanness, he complained of a giddiness, and as it were the fluctuation of a sound in his head, and a tingling noyse in his ears. Altho he was troubled with a great stupor, yet his sleeps were mightily troubled, and broken with delirious fables. After four days, when the feavour was not yet declined, it was thought good to take away four or five ounces of blood, by Leeches, from the sedal veins; from hence the feavour began to be much exasperated, for a great intense heat, with thirst, watchings, and almost continual tossing of the body, also the tongue dry, and scurfy, appeared; then quickly a troublesome cough, with abundance of discoloured spittle followed, to him were administred, *almond*, and *barly-drinks*, with temperate bechicks (or things to stop coughing) boyled in them; water of milk distill'd with *snails*, and pectoral herbs, the shelly-powders, prepared nitre, and often Cordial opiats; which notwithstanding scarce giving any help, the sick man still became more weak: when in this manner being sick above two months space, the feavourish distemperature, and cough also, dayly growing worse, he seemed near death, at length a voluntary sweating arising, so that every night, or every other night, he sweat abundantly, and from thence finding himself better, using then the aforesaid Remedies, he grew well within six weeks. *1. Observation.*

Till I had seen many sick people after the same manner, I suspected this disease to be alltogether an hectick feavour, with a consumptive disposition of the Lungs; but when I saw many others at that time fall sick ordinarily, after the like manner, I easily instituted the *Ætiologie* or national account of this feavour, such as I have already described: to wit, that the blood, because of the intemperature of the year, and perhaps from errors in dyet, had contracted a vitious *procatarxis* or remote cause: Then it growing feavourishly hot, and presently carrying its impurities to the brain, and so depraving the juice, watering it, and the nervous stock, induced the vertiginous distempers, with a *stupor*, a languishing of spirits, and an *atrophy* of the whole body: but so long as the blood did transfer its recrements, from its own bosom, into the brain and nervous *appendix*, the feavourish heat continued more gentle and milde: But afterwards, when the tending downwards of the morbific matter, by the opening of the hemorhoid veins, was drawn away *The reason of it.*

away from the brain, the same being first retained within the bloody mass, increased the feavour; then being poured on the Lungs, excited the cruel cough, with plentifull spittle: but foramuch as the flesh of the Lungs remained free from putrefaction, as soon as the serous water was sent away by a more plentifull sweating, the sick man became free, both from the feavour, and *phthisis* or Consumption, that seemed so deplorable.

2. *Observation.* In the mean time, whilst he lay sick, I visited another, about 12. years of age, after the like manner affected. But this when I was first sent for, having been sick above a month, was reduced to the leanness of a Skelliton: besides, he was troubled with a *vertigo*, with a noise in his ears, and deafness, and also with a violent cough, with yellow, and as it were consumptive spittle: his pulse was quick and feeble, his urine red and thick, his appetite much dejected, his spirits so languid, and his strength so cast down, that he could not keep out of his bed: I gave this youth to drink often in a day, water distill'd from milk, with snails and temperate herbs: besides I ordered him an open decoction, such as is in use for the Rickets, to be daily taken instead of his ordinary drink: by the help of which Remedies, he was restored to his health, in a months space. At this time I was sent for to many other people, of every age and sex, distemper'd by the same disease, now clearly Epidemical; for it, running thorow whole families not only in this City, and the neighbouring parts, but in the Countries at a great distance, as I heard from Physitians dwelling in other places, increased very much. Those for the most part labouring with this feavour, so be they were otherwise whole, grew well, by the fit use, and order, of medicine and dyet: but it hapned very often but ill to those, who were indued with a weakly constitution of brain, and nervous stock, or broken with age; but not seldom the case of the sick became dangerous because the Physitians were not wont to be sent for presently after the beginning of the disease, yea, scarcely before it had more deeply spread abroad its roots, and the opportunity of healing was past.

3. *Observation.* For that reason, this feavour became very deadly, in the family of a certain Noble man, among his children, originally obnoxious to Cephalic distempers. About the vernal Æquinox, a Boy of about eleven years of Age, began to be sick: At first without any vehement heat, or thirst, a dejection of appetite, and want of strength came upon him: Besides, an almost continual giddiness did trouble him, with a frequent danger of fainting, that he often thought he was just dying. By the advice of a certain woman attending him, they dayly gave him Clisters: then, when from the foulness of the mouth, and Tongue, manifest signes of a Feavour appeared, this Emperick on the fifth day, gave him a vomit of the Infusion of *Crocus metallorum*, and on the seaventh day a Cordial powder being administred, she incited the sick youth covered with blankets to sweat: his skin hardly began to be moist: but presently he began to talk idly, complained that his Cap was fallen into the water, by and by becoming speechless, within four hours, whilst I was sent for, he expir'd before I came.

4. *Observation.* A little while after, the same disease fell upon his yonger Sister: whose sickness however, because it was accompanied with a frequent and humid Cough, was thought at first to be only a taking of Cold; but within a few days, this Cough became plainly Convulsive: so that, whilst she Cough'd, the *Diaphragma* being caried upward, and with a renewed *Sistole*, held so a long time, she made a great noise as if about to be suffocated: then this little maid growing more apparently feavourish, complained of thirst and heat, and lay all night without sleep, with a mighty agitation of her body, and began to talk idly, after the same manner as her brother, of her coat being fallen into the water; and when all things grew worse, she began to be tormented with Convulsive motions, first in her Limbs, by and by in her face, and then in her whole body: the *Paroxysms* coming by often turns, twice or thrice in an hour, did most grievously trouble her, so that this little wretch, within the space of 24. hours, after the Convulsive Distempers began to grow more grievous, her animal spirits being almost quite spent, she dyed; whilst the Convulsive Fits tormented her, her pulse was very much disorder'd, and often intermitting, also a frequent vomiting molested her. Being sent for to visit this maid, also too late, a little before her death; when I could contribute nothing to the proroguing of Life, I endeavourd what I could, to finde out from her Death, the knowledge of the aforesaid disease, therefore having got

got leave to diſſect her body, the reaſons, and marks of the Symptoms chiefly urging, in this feavour, more clearly appear'd.

The knowledg of the diſeaſe found out by diſſecting the Carcaſe.

Opening therefore firſt the lower belly, I found all the bowells in it ſound enough, and well furniſh't: The *ventricle*, altho tyred with empty vomiting, contained nothing beſides the Liquor, lately taken in at the mouth: for neither in it, nor in its *Appendix*, were worms, or ſharp humours found, which are wont oftentimes to give a cauſe to theſe kinde of Convulſions: the ſmall guts, were in many places mutually involved: to wit, the *Convex ſuperficies* of one part, was thruſt into the concave of another, as into a ſheath, and hid far in it, which indeed I judge to have hapned, wholly from the convulſive Motions of thoſe bowels: for whilſt by reaſon of the vehement Convulſion, excited from the nervous *origine*, the oppoſite *fibres* being drawn together, did work the ſame Inteſtine, into contrary motions, it eaſily hapned that a part of the Inteſtine of the *Ilion* being carried upward, might run into the hollowneſs of the other, being ſnatch'd downward.

The *Thorax* being opened, the fleſh of the Lungs appeared very red, and as it were ſprinkled with bood, yea in ſome places as it were livid, and almoſt black: out of the ſame whereever it was cut, there flow'd forth a thin and frothy matter. Certainly this ſhew'd, that the feavouriſh matter, or the ſerous impurities of the boyling blood, being ſoon impacted in the Lungs, did ſo ſtuff up their pores and paſſages, that the blood it ſelf, being in its wonted and free Circulation, there ſtagnating, and being extravaſated, did excite a certain Inflammation.

We found a no leſs clear track, of this ſo deadly diſeaſe in the head: for the ſhell of the skull being removed, preſently the veſſells, creeping thorow the *meningæ*, were ſeen to ſwell very much with blood, as if almoſt the whole maſs of blood, were gathered together in the head: for the veins being cut or broken, about the Inwards of the lower and middle belly, little blood flowed forth: Beſides, thoſe membranes where they cloath the *Cerebel*, and being higher ſpread divide it from the brain, being ſprinkled in very many places with extravaſated blood, were noted to be of a black-purple colour; that it was not to be doubted, but the *Phlegoſis* or Inflamation round about excited, was the cauſe of the ſo cruelly infeſting Convulſions. Theſe coverings being taken away, the ſubſtance of the brain was ſeen to be altogether moiſt, and watered above meaſure with a watery humour: yea, its rine or bark being taken off, all the *ventricles* were full of a limpid or clear water, of which kinde of very clear Liquor, there was judg'd to be more then half a pinte.

The Pathologie of the aforeſaid Feavour.

From theſe appearances, the *Pathologie* of the aforeſaid feavour is eaſily Collected: to wit, in this ſickneſſe, as alſo in many others, the blood feavouriſhly growing hot, preſently depoſes its recrements, both into the Lungs, and into the brain; wherefore a ſerous Colluvies, or watery heap, did preſently overflow the conſtitution of either; then, becauſe the blood being hindred, both here and there, from its due circulation, it began to grow into a very great heap, about the confines of the affected parts, and at length to ſtagnate, and to cauſe as it were a *phlegoſis* or Inflammation: hence, by reaſon of the *ſerum* being plentifully heaped up in the lungs, and baked by the heat, the troubleſome cough, with the thick and diſcoloured ſpittle, for the moſt part came in this diſeaſe; and by reaſon of the like affection, excited within the head, the *vertigo*, ſwimming, ſtupifaction, and other *Cephalic* paſſions, conſtantly ſeaſed on the ſick: which kinde of Diſtempers, in this little maid, and in her brother, by reaſon of the infirm conſtitution of the brain, before in either of them, being made more greivous, terminated in an *Apoplexy*. I might eaſily here propoſe many other hiſtories, of perſons ſick of this feavour at that time, but from theſe but now recited, the Type of the aforeſaid diſeaſe, may be ſufficiently known: But becauſe the ſame feavour happens almoſt every year, on ſome præ-diſpoſed; and perhaps, by reaſon of an evill conſtitution of the year, may hereafter at ſome time become *Epidemical*, it will be worth the while, to repreſent ſome Method about its Cure.

The Curatory Method.

Concerning which, firſt of all take notice, that in this feavour, no Critical days were to be obſerved, as in the vulgar continual feavours: for the blood as ſoon as it began to grow hot, poured out a part of the morbific matter, as yet crude, and not overcome, from its embrace to the head or breaſt: wherefore it were vain to expect that the blood ſhould ſuffer the heterogeneous particles to be

heaped together, in its maſs to a fullneſs; that from thence a flowring or putting forth ariſing, at the ſet intervalls of times, it might thruſt the ſame ſubtilities out of doors: yea rather this growing hot glows not with a great, and open burning: but like a fire covered over with chips, ſends forth a moiſt ſmoke or breath, rather then a flame: But ſo, that from thence, by reaſon of the nervous juice being depraved ſoon in its diſpoſition, and not rarely, becauſe of the lungs being ſtuffed with the conſumptive matter, the convulſive, or phthifical or conſumptive ſymptoms, did moleſt chiefly, in the whole courſe of the diſeaſe.

Blood to be taken away at the beginning of the diſeaſe.

It behoves us to deſigne the curative Intentions, according to the various times of the diſeaſe, and the diverſities of the ſymptoms chiefly urging. About the beginning of this feavour, the taking away of blood, ſeem'd convenient allmoſt to all: This kinde of remedy, I often experienced with ſucceſs, in little Children: For that by the means, as it were another breathing place is opened, to the maſs of blood, ſilently and covertly growing hot, and obtruding its ſoot or ſmoak, on the more noble parts; and for that reaſon, its impure effloreſcencies or puttings forth, are drawn away from the brain, and lungs. Therefore, although this feavour of an ill Condition, may be accounted as it were malignant, yet foraſmuch as the blood is not preſently apt to be coagulated, but to be too much poured forth, and to beſtow its ſeroſities on the nobler parts, to wit, the brain and lungs; therefore *Phlebotomy*, ſo it be adminiſtred in the beginning of the diſeaſe, is convenient allmoſt to all.

For the ſame reaſon, *Cathartick* Medicines, and chiefly vomitory, are adminiſtred at the very beginning of the diſeaſe; for theſe do not only evacuate the *viſcera* of concoction, and ſo draw away the chief fomenting of the diſeaſe, and as it were its originall, but beſides, they draw forth the ſeroſities from the blood, and ſo effect its cleanſing, rather in the ſtomach and Inteſtines, then in the head and lungs. Further by Emeticks, for that the receiving *Glandulaes* of the *Lymphe-ducts*, are pulled with a great ſhaking, the ſuperfluities of the nervous juice, leaſt they ſhould evilly affect the brain, and its dependencies, are expreſſed forth into the lower bowells: alſo for this end, the belly is to be kept continually looſe, by the uſe of Clyſters. But in the mean time, whilſt the blood being infected with the taint of this diſeaſe, threatens the brain or *præcordia*, with the evill, it will not be ſafe to attempt any thing with *Diaphoreticks*, or ſweating medicines, or *Diureticks* or ſuch as evacuate by urine, or alſo with *Catharticks*, vomiting and purging medicines: For theſe kinde of medicines, foraſmuch as they greatly pour out the blood, and compell its ſeroſities into more open iſſuings forth, all the recrements, being apt to fall away from the maſs of the blood, are eaſily obtruded on the brain, or Lungs, when they are of a more feeble conſtitution: So in the youth above-mentioned, a loſs of ſpeech, came upon the raiſing of an untimely ſweat: Alſo I have known, that *Sudorificks*, no other then chaly beats, in the morbid diſpoſition of the lungs, have brought on a waiſting or Conſumption.

Vomits and Purges, are to be adminiſtred.

Phlebotomy therefore, and if need be vomiting, or purging, either one or other, or both, being to be made uſe of at the very beginning of the diſeaſe, the other Intentions ſhall be, to draw away the morbific ſeroſities of the blood, apt to flow forth on the head or breaſt, and to derive them gently by other ways of evacuation, and to put them forth of doors. To this end, *Veſicatories* or bliſtering plaiſters, ought to be applyed, to the nape of the neck, or *Parotida* or *jugular Arteries*, or to the Arm-pits, or the Groin, or about the thighs, or calves of the legs, ſometimes in this part, ſometimes in that; to wit, that the little Ulcers being here and there excited, and continually running, might plentifully pour forth the *ſerum*, imbued with the morbid, and heterogeneous particles.

Bliſtering plaiſters.

Diureticks.

But Remedies, gently carrying the *ſerum*, into the Reins, and urinary paſſages, are moſt often adminiſtred with ſucceſs: For this buſineſs, *diuretical Apozems*, and Julaps, are to be ordained after the following forms.

A diuretick Apozem.

Take of the Roots of *Scorzonera*, *cherfoil*, *graſs*, and of *Eryngoes* candied each ʒ vi. 1. *Apple* cut, of the leaves of *pimpinell*, *meadow-ſweet*, each i. handfull, of *Rayſons of the Sun*, ℥ i ß. of *harts-horn*, burnt ʒ ii. being cut and bruiſed, let them be boyled on a clear fire, in four pints of ſpring water, to the Conſumption of the third part; to the ſtraining being cleared ii. pints, add of the *Syrrop* of *green Cytorns*, or *violets* ℥ ii. of *ſal prunella* ʒ i ß. make an *Apozem*. The doſe ℥ iiii. to vi. thrice in a day.

Or

Or into that ſtraining, put 15 *blanched ſweet Almonds*, and of the four cold ſeeds, each ʒ i. being bruiſed, make an Emulſion according to Art. *An Emulſion*

Take water of *Dragons*, and of *black-Cherries* each ℥ iiii. of *ſcordium* compound ʒ ii. of *Threacle* water ℥ i ß. of *ſyrrop of Clove-gilliflowers*, ℥ ii. of the ſpirit of *vitriol* xii. drops, make a Julap. *Julap.*

Take oftentimes in a day, in ſmall beer or poſſet-drink, half a dram, or ii. ſcruples of *ſal-prunella*. *A Power.*

Beſides, in this feavour, medicines gently ſweating, of that ſort chiefly, which reſtores the animal ſpirits, and defends them from any heterogeneous *Copula*, are of very great uſe: wnerefore, either the *powder of pearls*, or the *ſpirit of harts horn*, or of *blood*, in a moderate doſe, are adminiſtred twice in a day, *viz.* Morning and Evening. *Gentle Diaphoreticks.*

Clyſters are to be given almoſt every day, and if it be thought fit, a gently looſning *purge*, may be taken once or twice in a week. *Gliſters.*

The dyet preſcribed ought to be ſlender, as in other feavours, let them be wholly interdicted from fleſh, or broath made thereof, only let the ſick feed on Grewell, or barly-broth, and let their drink be ſmall beer or poſſet-drink. *Dyet.*

If that notwithſtanding, any preventive phyſick, the morbific matter, ſhould lodge in the brain, or Lungs, or both together, ſo that a diſſolution, or inordination of the animal function, or alſo a violent cough, ſhould aſſalt them, it muſt be conſider'd, what is to be done in either ſtate of the diſeaſe, carried forth after this manner, into an evill condition; but then the curative Indications ought to reſpect the ſtupor, or madneſs, or cough: and laſtly, if in the declination of the diſeaſe, theſe ſymptoms do remit, proper Remedies are to be adhibited, againſt the *Atrophie*, as it were the laſt fortreſs of this Feavour.

1ſt. Therefore if the morbifick matter, as it is often wont, being brought to the brain, ſhould bring in an Inſenſibleneſs, or a ſoporiferous or ſleepy diſtemper, remedies drawing it another way, and deriving it ſome way from the head, and beſides ſuch as ſtir up the animal ſpirits, and take away the impure *Copula* ought carefully to be adminiſtred, wherefore in this caſe, the uſe of Epiſpaſticks or ſuch things that draw the water outwardly, ſhould be much increaſed, and let the *ſpirit of Harts-horn*, be exhibited allmoſt every ſixth hour, in a little bigger doſe, let blood be alſo taken, by the ſucking of Leeches, more largely from the jugular veins, the *Salvatella*, or the ſedal veins. If the diſtemper remits not, the head being ſhaven, let *Emollient fomentations* be often applyed thereto: Further, let *Cupping-Glaſſes*, *Plaiſters*, and *Cataplaſms*, be laid to the ſoals of the feet, and other means of Adminiſtrations, ſuch as are commonly preſcribed for the curing of the ſtupor, or Inſenſibleneſs, ought to be uſed: In like manner, if on the evill, or no *Criſis* of this feavour, a phrenſie, or madneſs ſhould come, remedies appropriate to thoſe diſtempers, are made uſe of. *The Curatory Method in the unſenſibleneſs and madneſs.*

2dly, But if either with, or without this ſort of diſpleaſure, brought to the head, the Lungs alſo have taken the evill of this diſeaſe, ſo that the ſick, not yet free from the feavour, ſeem to fall into a waiſting, or Conſumption, with a troubleſome cough, with abundance of thick, and often diſcoloured ſpittle; Medicines commonly preſcribed for ſuch kinde of Diſtempers, are convenient enough; wherefore, pectoral Decoctions, Electuaries, ſyrrops, diſtill'd waters of milk and ſnails, and other remedies of the like nature, ought diligently to be made uſe of; the forms of which may be found, in the before-deſcribed Caſes. *In the Cough.*

Thus far we have deſcribed the continual feavour, for the moſt part convulſive, and ariſing no leſs from the fault of the nervous juice, then of the blood: I will here further propoſe an example of a diſeaſe, having the likeneſs of an intermitting feavour, but radicated chiefly in the nervous juice; the nature of which kinde of diſtemper, for that it is very rare, and truly pertinent to our convulſive *Pathologie*, will appear from the following hiſtory.

A noted Woman very young, and indued with a more weak conſtitution of brain, and nervous ſtock, and for that cauſe very obnoxious to convulſive diſtempers, after ſhe had conceived with child, about the fourth month of her being big, from cold being taken, ſhe was grievouſly afflicted with Aſtmatical fits, and beſides, with a frequent ſinking down of her ſpirits: but by the uſe of remedies, indued with a volatile ſalt, ſhe grew well, within a fortnights ſpace, but after that, about 14. days, an unwonted and truly admirable diſtemper, fell upon this Gentlewoman. *A very rare Obſervation.*

One morning, awaking after an unquiet sleep that night, she felt a light shivering in all her body, as if she had had the fit of an Ague: frequent yaunings, and reatchings, with an endeavour to vomit followed thereupon: then her urine, which was but now of a citron colour, and of a laudable substance, became pale, and waterish, and was rendred at every turn, to wit, almost every minute of an hour: moreover, about her loins, and *hypochondria*, and in other places, pains with light Convulsions, running about here and there, were excited: which kinde of symptoms plainly convulsive, with her frequent making of a lympid urine, continued in the Morning allmost to Evening, in which space of time, a great quantity of water, at least three times more then the liquor she had taken, was rendred; in the mean time, neither was the heat great, nor did thirst trouble her, nor was her pulse encreased: In the evening the aforesaid distempers ceased, and her urine became citron colour, and moderate; and besides, all night she enjoy'd a moderate sleep, then the morning following, about the same hour, the fit returned, accompanied altogether with the like symtoms, and so dayly acted the same Tragedy.

The reason of it. Visiting this Gentlewoman, after she had been sick in this manner for 12. days, I framed the Ætiologie of the aforesaid case, to wit, that this disease, chiefly radical in the nervous stock, did depend upon the effervescency, and flux of the humour, watering the nervous parts: For it might be suspected, that this water being diffused from the blood, made degenerate by reason of the suppression of her Terms, upon the brain, and nervous stock, became more sharp, and serous than it ought to be, and for that cause incongruous to the containing parts: wherefore, being gathered together to a plenitude, by the nights sleep, it did stir them up, or provoke them, for the expulsion of it, every where into wrinklings, and contractions: hence shiverings, yaunings, streachings, and wandring pains, were excited in the whole body: Furthermore, from the sollid parts, after this manner contracted, and shaken, not only the nervous Liquor, but also the nutricious, every where laid up in the sollid parts, but not truly assimilated, were shaken off: and then, either *Latex*, being exterminated from its receptacles, and received by the veins, or Lymphaducts, or water-carrying vessells, was render'd to the Mass of blood: from whose bosome, before it had acquired a lixiviall tincture from it, being at last cast forth by the reins, constituted a clear, and Copious urine: But that this distemper observed such exact periods, the reason is, because the nervous water, being supplyed with an equall dimension, did arise to a fulness of running over, dayly at the set time: Therefore also, the urine appeared concocted, and yellow, before and after the fit, because then its matter consisted only from the *serum* of the blood: Afterwards, during the convulsive fit, the limpid humour being shaken off, from the solid and nervous parts, and passing quickly thorow the blood, adulterated the colour and the quantity of the urine. I prescribed to this big-bellied woman, Phlebotomie, and besides, a powder composed out of *Corall, pearls, ivory*, and other *Cardiacks*, to be taken thrice in a day, in a proper Liquor; morning and evening she took of the *tincture of Antimony*, 12. drops (whose singular effect in the too great flux of urine, I have many times experienced): By the use of these, all the symptoms ceased, in a short time.

CHAPTER IX.

Of Universal Convulsions, which are wont to be excited, because of the Scorbutic dispostion of the Nervous juice.

Universal Convulsions by reason of the Scorbutic dispostion of the nervous juice. THus much concerning universal Convulsions, diffused thorow the whole nervous kinde, which come upon feavours; and especially concerning the Convulsions, which are wont to be excited, in the commonly called *malignant hectick Feavour*. There yet remains (which was proposed in the third place) for us to shew, by what means, and from what causes, universal Convulsions are induced, without

without poyſon or ſeavouriſh infection, by reaſon of the ſcorbutick, or otherwiſe vitious dyſcraſie or evill diſpoſition, of the nervots juice. For indeed, the Liquor watering both the nerves, and the nervous parts, ſometimes diſceding from its naturall diſpoſition, is ſo much ſtuff'd with heterogeneous and exploſive particles, that the animal ſpirits, admitting an incongruous *Copula*, every where growing to themſelves, are irritated into continuall, as it were cracklings, or convulſive exploſions: Theſe kinde of Affections of the ſpirits, are either divided or ſeparated, between which no Communication, or dependency intercedes, *viz.* When many parts of the body are troubled at once, with ſo many Convulſions proper to themſelves, which do not come ſucceſſively one from another, but are terminated in the ſame muſcle or member, where they begin: After which manner, I have known ſome ſick people, who have had their muſcles and tendons, all at once in their whole body, perpetually to leap forth, with ſo many diſtinct Convulſions. Or Secondly, the Convulſive Diſtempers, which are excited in the whole nervous kinde together, are continued or connex, which ſucceed one another, with a certain perpetual viciſſitude continued between themſelves: Foraſmuch as inordinate motions, almoſt of all the members, mutually relieving themſelves, being riſen in one part, preſently paſſe over to others. For ſo *Horſtius* relates of a maid, obnoxious to Convulſive motions, whoſe members and Limbs not only were forced into divers manner of flections and diſtortions, but beſides, as if agitated by an evill Spirit, not being able to ſtand in a place, ſhe was neceſſitated to run up and down here and there, and to dance, and leap in the Hot-houſe; nor could be hindred from it by any force or chiding, but that ſhe would run here and there; now ſhe would caſt her ſelfon her feet, now impetuouſly fling her ſelf after another manner, for if ſhe did endeavour never ſo little to be quiet, preſently her *Præcordia* was moſt grievouſly afflicted. Wherefore, the Buſineſs of our preſent task is, to enquire a little more exactly, into the nature and Cauſes of either Convulſive Affection, to wit, both of that, which is affected through the very much leaping of the tendons and muſcles together, and of this, which is cauſed through the madneſs and inquietudes of the members or of the whole body: that from thence it may appear, what method of healing ought to be adminiſtred in either Caſe.

Two kindes of theſe viz. Separate and Connex or joyned together.

As to the former kinde, it eaſily appears, that theſe kinde of diſtempers, are not ſimple, but complicated, to wit, of a Convulſion, and Palſie. For the muſcles and tendons, are perpetually urged with Convulſive motions, notwithſtanding, the ſick being made weak, they are not able ſtrongly to move any of their members, or their whole body: yea, to theſe Diſtempers, pains equally diffuſed thorow all the Limbs, are adjoyned. Hence we may infer, that the animal Spirits are imbued, with a manifold *Copula*, *viz.* both with exploſive, and alſo narcotick ot ſtupifying, and in ſome ſort irritative or provoking particles: ſo that, although being alway burthened, they enter into exploſions, yet, not many together, nor indeed any haſtily or ſtrongly are exploded, by reaſon of the other interjected Particles of another kinde; wherefore the motive force does not long continue, but is ſhort, and as it were interrupted: juſt as if gunpowder being kneeded with ſome muddy ſubſtance, ſhould be fired: for then the whole maſs is not let off at once, with a noiſe, nor does one heap preſently fire another, but a few grains only, and thoſe ſucceſſively, to wit, one a little while after another, with ſmall crackling noiſes, are let off or exploded: In like manner, the nervous Liquor is ſtuffed thorowout, with Convulſive particles, which even cleave to the Spirits: but foraſmuch, as ſome narcotick, and other painfull ones, are mingled with them, the elaſtick force of the former, however laſting, and greatly diffuſed, is yet much broken and every where cut off.

The nature of the broken Convulſive diſtemper.

For the illuſtrating this kinde of broken convulſive Diſtemper, I will here deſcribe a very notable caſe of a certain Gentleman lately living in this neighbourhood: which being truly admirable, not any writings or obſervations of Phyſitians, have ſcarce ſhewed the like. An honourable Gentleman whom I knew, ſprung from Parents, and grandfathers obnoxious to a ſomeways morbid diſpoſition either of the Brain, or nerves, about the hight or beyond the ſtrength of his Age, the fruit of this diſeaſed Race began to puniſh him: for firſt of all, he was wont to be tormented with a debility, and numbneſs of his Limbs, and with light Convulſions; with which kinde of Diſtempers, when he had a while laboured at length,

An obſervation.

for

for cure ſake going to the Bath, having uſed too much the hot bathes, inſtead of a remedy, he brought back only an exaſperation of the Diſeaſe, that from that time, the aforeſaid Symptoms did not any more torment him by fits, but almoſt continually, to wit, the Convulſive motions, and painfull extenſions, did inceſſantly exerciſe every Limb, yea, every part of his Body, ſo that all the muſcles were perpetually drawn together, with repeated leapings all at once, and that not without great torment: The only means he had for quieting them, was to exerciſe his whole body, ſometimes ſome of his members, perpetually with a local motion: for ſo long as he was awake, he was neceſſitated to be rock'd in his bed, or on his couch, or to be carried in a Coach, or to have his members preſs't or rubb'd; for which end they had made for him a Bed, and a Chair ſet upon bow-faſhon'd feet, ſuch as are on Childrens Cradles, in which, when he lay down or ſat upright, he was moved up and down continually, with a tottering or rocking motion; which unleſs he did, he was infeſted with moſt cruel pain, and horrid extenſions of his muſcles: This kinde of dayly trouble, of the Convulſive Diſtemper, in the night-time, and preſently after ſleep, entertain'd much more grievous Symptoms: for being newly awaked, his whole body preſently was wont to quake, his muſcles to be exerciſed with painfull ſtretchings, every Limb to be wetted with a ſqualid or ill-favour'd ſweat, as if in the agony of Death, which was ſo very Corroſive, that, like *aqua fortis*, unleſs they preſently wiped it off, it quickly eat and rotted the Linnen. The ſick man, during this Conflict, was tormented for many hours, between the ſweats and ſhiverings, untill being quite tired out, ſleep creeping upon him, brought him ſome eaſe; but if at the approach of the fit, he was preſently taken out of his Bed, he was better, and ſo prevented the wonted cruelty of the Diſtemper: Therefore, as ſoon as he was awaked from ſleep, though it hapned within half an hour, immediatly to avoyd the torture, his ſervants being called, they took him out of his Bed: As to his Appetite he was well enough, he eat without loathing, nor was his ſtomack diſturb'd with what he eat: But he did often complain of the pain of the heart, and ſometimes a troubleſome Spitting, with a ſtink in his mouth, as if he had taken *Mercury*, moleſted him for many days. All hot things, whether food or Phyſick, did nor agree with his conſtitution; he did not dare to taſte, either wine, or ſtrong beer: In the firſt years of his ſickneſs, he abhor'd the very ſight of the fire, afterwards becoming weaker; though the winter was ſharp he would not ſit neer the Chimny; his Urine was always of a Citron colour, which if it were evaporated in an earthen veſſell, over hot coals, ſaltiſh fæculencies remained in the bottom, to above half the Liquor; his belly was continually bound, and never put forth its load, unleſs provoked by a purge or Clyſter: Yea, beſides the Convulſive motions, a Spurious Palſie poſſeſſed every member of his whole Body, for he could not lift up his hand, nor ſtep a foot forward; his tongue ſhaking, brought forth his words but imperfect, but ſometimes, when his minde was carried forth, by ſome ſudden occaſion of Joy, he would be able, his Spirits being raiſed with a wonderfull ſtrength, ſuddenly to riſe out of his chair, and without the help of another, to ſtand upright, and to jump, which interval however laſted ſcarce a minute of an hour, but that his members flagg'd, and were affected with their wonted languor and trembling. When this worthy Gentleman, had been ſick after this manner above 12. years, and had conſulted the moſt famous Phyſitians in all *England*, and had tryed very many Remedies, and almoſt of every kinde, *viz.* Antiparalytick, antiſcorbutick, drying Diets, Sweating medicines, purges, Cauſticks, baths, Liniments, yea, and had twice tryed ſalivation, could finde no cure by any method of healing; wherefore, all hope of cure being wholly layd aſide, for the latter ſeven years of his life, he made uſe of only Remedies, chiefly reſpecting ſome Symptoms, *viz.* he took thrice in a week a ſolutive medicine, of *Senna* and *Rubarb* with Correctives, now in form of a Syrrop, or of an extract another time; every night he was wont to take a doſe of an opiate, out of conſerves, and temperate *Species*: Beſides, as occaſions ſerv'd, he had ready a Julap, to be taken when his Spirits fainted: moreover, he continually drunk Beer, made of oaten mault, altered with temperate and diuretical herbs. By the uſe of theſe, he paſs'd over at leaſt ſeven years, without any great alteration for the worſe; at length, old Age coming on him, together with the diſeaſe, more cruel fits of Convulſions, not as at firſt after ſleep, but aſſoon as he was warm in his bed, invaded

vaded him, that he was forced to abſtain altogether from his Bed, and rarely put off his cloaths, unleſs to ſhift his Linnen: from hence tranſpiration being hindred, the ſerous Recrements, and others, wont to be evaporated, were fixed on the Lungs, which at firſt, brought in a freqnenr or ſhort breathing, afterwards an Aſthmatical Diſtemper, and laſtly a deadly Conſumption or waſting.

The reaſons of the ſymptoms chiefly tormenting.

If the Reaſons of the aforeſaid Symptoms be ſought after, it will be eaſie, to deduce all theſe evills from a depraved Conſtitution of the Brain, and nervous ſtock, and more immediatly from the dyſcraſie, and fault, of the juice watering thoſe parts. For when that Liquor, in which the animal ſpirits, do abound, was, as to its temper, highly ſharp and Corroſive, like *Stygian* water, and as to its mixion, was ſtuffed full of both narcotick and exploſive particles, it is no wonder, becauſe the Spirits being very much burthened, and for that cauſe reſtrained from their due expanſion, that they ſhould be forced every where into ſmall exploſions, as it were Cracklings; and that the containing bodies, being looſed from their due extenſion and ſtrength, ſhould be alſo continually irritated into painfull Corrugations or ſhrinkings up.

The growing worſe preſently after ſleep whence it proceeded.

Thoſe Convulſive Diſtempers, did more ſharply infeſt after ſleep, becauſe the heat of the Bed, did exuſcitate or ſtir up the heterogeneons particles of the nervous juce, and rarifying them, as it were compell'd them into exploſions; then alſo, becauſe the nervous parts did imbibe its juce in ſleep, and a more plentifull proviſion of the morbifick matter, brought together with it; which being filled to a plentitude, at the firſt inſtant of waking, they immediatly endeavour to ſhake off what is troubleſome. For this Reaſon, it is obſerved, that the pains of Scorbutical people, and the fits of Aſthmatical, are made worſe by the heat of the bed, and by ſleep; therefore as in theſe, preſently to leave the bed, was wont to give eaſe, ſo likewiſe it did in our ſick man: But that the trouble, excited by the continual leapings, and painfull extentions of the muſcles, was ſomewhat allayed by the local motion, or moving from one place to another, of the body, or members, the reaſon is, becauſe the Animal Spirits, whilſt they are compelled to divers actions from without; they remit whatſoever inordinations are excited from within: for as in pain, and itching, which are lighter Convulſions, it helps to preſs, rub, or ſcratch the affected part, ſo the Convulſive motions of the muſcles, and tendons, are ſomewhat pleaſed, by the inordinate agitation of the whole body, or the members.

Why allayed by Motion.

The ſpitting.

As to the *Ptyaliſmus*, or copious ſpitting, with the ſtinking breath, which was wont to return at uncertain intervalls, we do ſuppoſe, that might perchance proceed from *Mercury* ſometime ſecretly given, although I have ſeen many labouring both with Convulſive, and alſo ſcorbutick diſtempers, in whom this kinde of perpetual defluxion of ſpittle from the mouth, was very troubleſome, without any ſuſpition of *Mercury*; alſo ſome (as ſhall be told hereafter) on whom a ſalivation coming (the exploſive matter being after this manner Critically evacuated) help'd the diſeaſe: moreover, it is likely, that this diſtemper was produced from the mere recrements of the nervous juice; and that the ſalival paſſages, when many, and enough were open, did receive, and convey forth of doors, the ſuperfluities plentifully depoſited in the *glandula's*, from the nerves, and alſo from the Arteries.

Why this ſick man obtained ſome truce from pains.

As to the lucid Intervalls, whereby the ſick man us'd to obtain ſome truces, though ſhort, the cruelties as it were of the diſeaſe being mitigated, as when but now his ſickneſs had bound him to his chair, he was able on a ſudden to leap up, and walk about; but yet, this unlook'd-for ſtrength being vaniſh'd, by and by falling again into his wonted languiſhment: I ſay theſe kinde of motions of labouring Nature, proſtrate under a great burthen, are its utmoſt endeavours, and ſome more ſtrong inforcements, to wit, whereby for a moment of time ſhe recollects her ſelf, and attempts as it were to ſhake off the yoak of the Diſeaſe; but becauſe ſhe is not able to ſuſtain long this ſtrife, ſhe quickly relapſes, and lies down under her former burthen. Truly it is a wonder, how much above the ſtrength of Nature, Anger, and fear, and ſome other paſſions of the minde, do ſtretch the nervous kinde, and compell them to ſhew a force plainly ſtupendious: But theſe prodigies of her attempts, are only of a ſmall duration.

The ſecret leading cauſe of the aforeſaid diſtemper.

The Conjunct cauſe of the aforeſaid diſeaſe being after this manner deſigned, and the Reaſons of the Symptoms chiefly tormenting, being ſhown, it remains yet

yet for us to inquire into the ſecret leading cauſe, to wit, by what occaſions, the nervous juice being become ſo degenerate, at firſt brings in the Palſie, and then leapings, or inteſtine Convulſions of all the muſcles: further, we ought to explain wherefore the fruits of this Diſeaſe, increaſing by little and little, came ſuddenly to maturity, by the uſe of the Baths; alſo wherefore this ſickneſs yielding to no Remedies became uncurable.

As to the firſt, it may be ſaid, that the ſick perſon, being ſprung from parents who were obnoxious greatly to Cephallic Diſeaſes, had contracted originally an evill Conſtitution of the brain, and nervous ſtock, ſo that within the 6th luſtre (*i.e.* about the 36th year) of his Age, he began to be ſick of a ſpurious Palſie, then, when the evident cauſes daily fixing the infection more on the bloud and humours, did happen upon this remote hereditary cauſe (for there were many chances, and unfortunate accidents, which continually brought ſadneſs, and melancholly upon this Gentleman) indeed therefore, the nervous Liquor being imbued above meaſure, with a fixed and Scorbutic ſalt, became highly ſharp and irritative, like *aqua fortis*, or the Stagma's of *Vitriol*; and ſo continually incited the Spirits, and the bodys containing them, into Corrugations and contractions, juſt as the aforeſaid Liquors when poured upon worms do the ſame thing.

Why this Diſtemper grew worſe by the uſe of the Baths.

But that this diſeaſe, leaſurly at firſt increaſing, was quickly brought into a much worſe condition, by the uſe of the hot Bathes, the reaſon eaſily appears: It is known by experience, that the hot Bathes, do very much exalt, and quickly bring to the hight, the Sulphureous-ſaline particles, in the humane body, and otherwiſe morbid, which abound in the Bowells, and humours, *viz.* do render them more fierce by agitating them throughly, and force them from their firſt paſſages into the blood, and from thence into the Brain and nervous ſtock, yea, and joyn together thoſe, that were before ſeperate, and idle, and incite them into a certain fermentation: wherefore, thoſe who are hereditarily obnoxious to the *Gout* or *Stone*, and have not as yet ſuffer'd any fits of thoſe diſtempers, very often feel the fruit of either diſeaſe in themſelves to grow ripe ſoon, by the uſe of the Bathes: When therefore in this ſick perſon, both the blood, and Liquor watering the Brain and nerves, were imbued both with narcotick or ſtupifying, and convulſive particles; and alſo when they did degenerate from their ſweet, and balſamy Diſpoſition, that towards a ſaltiſh, and this into a ſour, *Ciamul* of a *Stagma* of *Vitriol*, the uſe of the hot minerall waters, was ſo far from bringing help, that on the contrary, theſe evills, for that very cauſe, preſently grew all very much worſe: and the Diſeaſe, proceeding from the humors being ſo depraved, as to their temper and mixture, could never be cured by any medicines, no eaſier than vinegar may be reduced into wine.

When this Gentlemans body, being at laſt dead of the *Phthiſis* or *Conſumption*, was opened by me, we could finde but very few foot-ſteps, of theſe kinde of moſt grievous Symptoms. Hence, as it appear'd, the *Palſie* and *Convulſion*, did not depend, ſo much on a thick and copious matter, heaped together ſomewhere in mines, as of an evill affection of the animal Spirits, who are ſubtle and Inviſible. I will lay forth, what was worthy taking notice of, in the anatomy of this perſon.

Things worthy to be noted in the body being diſſected.

The *Abdomen* being opened, the *Caule* (as is wont to be in moſt who dye of a Conſumption, and other Chronical Diſeaſes) was putrified, aud almoſt conſumed. In the mean time, the *Ventricle*, *Inteſtines*, *Pancreas*, and *Meſentery*, were well enough, to wit, the membranes were firm, well coulour'd, and free from any ulcer, or hard ſwelling: There grew to the greater Inteſtines certain excreſcencies like to the ears of a mouſe; for that there were very many of theſe kinde of things out of either ſide of the *Colon*, and right inteſtine, they ſhewed like twins at certain diſtances, like the branches of Trees: The like I formerly found in a Conſumptive perſon: The Reaſon of this ſeems to be, that the nouriſhment in Conſumptive people, (though it be deficient about the more ſolid, and outward parts, yet ſometimes) within neer the fountains of the nouriſhing juice, performs more than it ought, and for that cauſe, ſuperfluous and unnaturall additions grow forth.

The milt or Spleen, which always is thought ill of, and of moſt Phyſitians condemned, for being the Principal cauſe of the Scurvy, and of all other diſtempers, appear altogether blameleſs, and free from any fault: For, as in moſt

ſound

people, we obſerved, it was of a darkiſh Colour, ſoft and of an equal *ſuperficies*, free from any obſtruction, or ſwelling, indued with veſſells, and *fibres*, diſtinct, and firm enough: out of its ſubſtance, flowed black blood when it was cut.

The Liver (which indeed might be wondred at) was indifferently well, neither was it, from ſo long and grievous a ſickneſs, become harder then uſuall, or ſcirrhous, or planted with little whelks, but it was ſomewhat big, and of a darkiſh colour.

The Kidnys, though free from any ulcer, or gravell, were not however free from fault: for in the middle of the right Kidney, was ſeen a great cavity, diſtinct from the Tunell, and much greater then it, full of clear water: the like I have very often found, in hydropical people: But indeed, this perhaps aroſe, from the *ſerum* depoſited in that kidny, that could not eaſily be ſtrained thorow its paſſages, and pores; for that the *ſerum* ſubſiſting therein, had in the beginning made for it ſelf a little den, which afterwards by degres was inlarged, and when for this Reaſon, the ſecretion of the *ſerum*, and its paſſing forth by the *ureter*, were ſomething hindred, its *Latex* reſtagnatiug into the blood, brought in the grievous trouble to the head; which indeed was the rather to be ſuſpected, becauſe alſo the left Kidny, being mightily extenuated, and conſumed, contained many Ciſterns, and Cavities full of clear water.

The Lungs, growing on every ſide to the *Sternum*, (or part of the breaſt where the ribs meet) ſides, and *Diaphragma*, ſeem'd without any diſtinction of *Lobes*, of one ſubſtance only of putrid ſpongy fleſh, ſtuffed throughout with a frothy or ichorous matter: without doubt, the ſick man had not contracted this evill ſo long before, to wit, when he was not able to perform any exerciſe of the Body, nor ſtay in bed that it might breathe out any thing more freely, the fæculencies and recrements of the blood, which were wont to evaporate thorow the skin, being layd up in the Lungs, were the cauſe, that they grew together among themſelves, and with other parts, and did vitiate their tone and conformation wholly, ſo that, a Conſumption being at laſt ariſen, was the effect and product, and not the cauſe of the reſt of the diſtempers, wherewith he had bin a long while miſerably afflicted.

In either ventricle of the heart, blood was concreted into a ſolid whitiſh ſubſtance, and bak'd like fleſh, which being formed neer the Cavities, and proceſſes of the veſſells of the Heart, reſembled the figure of a Serpent, with a manifold divided tail: than which indeed nothing is more uſual, in many dead People after long ſickneſs: The reaſon of which is, that the Blood being without life, from long ſickneſs, and from thence circulated ſlowly abont the *Præcordia*, begins to ſtand or ſtagnate in the heart, and depending veſſells, and by that means, is congealed leaſurely, into this kinde of fleſhy Concrete.

When the Skull was opened, we ſought among its contents, the chief Cauſe of the Diſeaſe: The firſt thing that occurr'd was, the bulk of the brain was leſs than it ſhould be, and folded into fewer folds, from whence we ſuſpected, that the Animal Spirits, were uot plentifully enough brought forth: Further, the whole ſubſtance of the head, was more moiſt than it ought to be, and wholly immerſed in a wet watery humour, that its Covering, *viz.* the whole meninges, were pulled aſunder, and the compaſſing or crevices, and all the ventricles, run over with clear water. 'Tis probable, that this deluge of the Brain, had lately hapned, to wit, foraſmuch, as by reaſon perſpiration being hindred, and the Secretion of urine being but little, the ſeroſities gathered together in the bloody maſs, were carried to the head, and therefore, the ſubſtance of the Brain, and eſpecially the chancelled or chequer'd bodies, were ſo wholly wetted, and ſoked, that being cut, their ſubſtance could ſcarce remain compacted, but that it would flow away, ſomewhat after the manner of thick Liquids: within the boſoms overlying, and inſerted to the brain, and its *Appendix*, and the veſſells coming from them, the blood had concreted into little, round, hard, and as it were fleſhy balls, juſt like thoſe within the ventricles of the heart, and the veſſells hanging to them, which alſo lately, when the Bloud circulated ſlowly, we thought might happen, for the ſame reaſon, for which the blood was coagulated within the *Præcordia*.

The trunk of the Spinal marrow, being drowned in clear water, was very much extenuated, that it could ſcarce fill half of the bony cavity or hollowneſs:

which we thought to be effected, by the deluge of salt *Serum*, in which it was as it were boyled.

The Nature, and the manner, of the continued convulsive distemper being made

So much concerning universal Convulsions, which being very much conjoyned with the Paralytick Distemper, are excited dividedly in many parts at once: There remains others, which we call'd continued, because being suddenly translated, from some parts to others, they mutually relieve one another, and compell the members; now these, now those, and often the whole body, to be involuntarily moved, and diversly bended, or agitated. In these Cases, the *Animal Spirits*, not only those implanted in private corners, and mines, get to themselves an explosive *Copula*, and being some how satisfied, or irritated, strike it off by certain turns; but when the whole mass of the nervous Liquor, abundantly abounds with elastick particles, they then every where cleaving to both the Spirits implanted, and flowing in, for that reason stir them up into Continuall Convulsions: But forasmuch, as not all the Spirits at once, are not able, however predisposed, to be exploded, (because within the nervous passages, there is not room large enough for their so great agitations) therefore the explosive force, arising in these, or those parts, is by and by transfer'd, from thence, unto others, and so to others, and so like fire-draks, or wild-fire, it runs wandringly here and there, most swiftly creeping from these Limbs, to those, and then presently from all into the *Præcordia*, or *Viscera*, and back again. That the Image of those kinde of distempers may be known, we will here propose some more rare Cases; of sick persons, whom sometime past I endeavoured to Cure.

1 Observation.

A very fine and religious maid, tall and slender, begot of a Father sickly, and obnoxious to most grievous Distempers of the nervous kinde, about the 20th year of her Age, was afflicted for many days with an head-ach, very Cruell and periodical; at length, at the time of the winter solstice, 1656. the pain of her head ceased, but instead of it, a mighty Catarrh followed, with a thin and Copious spitting, also an ulcerous distemper of the nose and throat; when she had for some time endured this trouble, at length, by the prescript of a certain Woman, receiving the fume of *Amber* by a tunnell into her mouth, she was suddenly cured, to wit, the Catarrh, or violent Rhume ceas'd suddenly, but from thence she complained of a notable *Vertigo*, with a pain in the head, and of the tingling noise of the ears: on the Third day, the tendons of the hinder part of her neck, were pulled together, that her head was bended now forward, now backward, and now of one side, sometime it continued stiff and unmoveable; a little after this, the same kinde of Convulsive Distemper invaded the outward members, and Limbs of the whole body, her arms and hands were wonderfully turned about, that no jugler or tumbler could imitate their bendings, and rollings about; she was necessitated to spread abroad her leggs, and feet, here and there, to strike them against one another, and to transpose or cross them by turns: After this manner either sitting in a Chair or lying in a Bed she was perpetually afflicted with these Convulsive motions, unless when overwhelmed with sleep; and when she did a little restrain her members from the great labour of the Muscles, presently she was taken with a difficult and short-breathing with a sense of Choaking; but in the mean time, her eyes, jaws, mouth, and lower bowells, remained free from any Convulsion; neither was she troubled with vomiting, belching, nor any inflation of the belly, and *hypochondria*: Besides she was still her self, and had truly the use of her memory, understanding, and phantasie, she did, nor said any thing madly, or foolishly: but in these wonderfull evills, she shew'd an admirable example of Christian fortitude, and patience, even with godly and discreet speeches; her appetite was soon lost, so that she took any meat or aliment very unwillingly; thirst continually troubled her, and her strength was grown so feeble, that she could not stand or walk, her urine was of a Citron colour, very full of saltness, on whose *superficies* grew little tararous skins.

When I was sent for to this Gentlewoman, on the Sixth day of her sickness, I framed the Ætiology of this kinde of admirable distemper: For the consideration of her father, who at that time was sick in the same house, with most grievous Convulsive passions, kept me, that I did not with many others, refer all things to the delusions of witches: wherefore, that I might seek out the natural Causes of these Symptoms, it was in the first place plainly to be suspected, that this Gentlewoman

Gentlewoman had contracted hereditarily the ſeeds of Convulſive Diſtempers, which at length, about the flower of her age, broke forth into this kinde of fruit: for when her blood was very much imbued with heterogeneous and explo-ſive particles, they at length (as is wont in ſuch a diſpoſition) began to be poured into the head, and there to be fixed: being therefore firſt depoſited in the *Meningæ*, they induced the huge periodicall head-ach; then afterwards, the ſame matter having accidentally ſhifted its place, falling down into the ſinks of the throat and mouth, changed the *Cephalage* or head-ach, into a *Catarrh* or *Rhume*: and when laſtly by an untimely uſe of the adminiſtred Remedy, the defluxion ſtop'd, the morbifick matter flowing back into the brain, brought the *Vertigo*, and then, being thruſt forth on the nervous ſtock, it excited the aforeſaid Convulſive Affections.

As to the formal Reaſon, or the means of generation, whereby the Convulſive matter, falling down into the nervous ſtock, did produce theſe admirable Symptomes, we may lawfully ſuppoſe, that the ſame being thruſt forth from the Confines of the head, being yet more firm, into the ſpinal marrow, and its *Appendix*; and being like a malignant firment, it firſt infected, with heterogeneous and highly exploſive particles, theſe parts of the juce watering the whole maſs; which cleaving to the ſpirits, every where diſpoſed thorow their whole *ſeries*, and agitating them, as it were with a certain fury, did ſtir them up into continuall exploſions: When in truth, the nervous juice, as is ſaid, was ſo fermented by the inflowing of the Convulſive matter, that which did other ways water the containing parts, with a gentle falling on them, and through the ſame; did paſs over the animal ſpirits, with an equal Expanſion; now the ſame did torment the nervous *fibres*, with various contractions, and Corrugations or ſhrinkings up, and did hinder both the ſpirits flowing in, being too much burthened with an heterogeneous *Copula*, from their due irradiation, and alſo variouſly moving thoſe implanted in every part, did incite them, as it were with a diabolical Inſpiration, ſo that no more obeying the Empire of the will, they ran into inordinate motions, and did renew them, tranſlated rapidly here ahd there, with a perpetuall reciprocation. *The reaſon of the aforeſaid caſe.*

But, altho the heterogeneous particles, being poured forth with the blood, into the brain, and thence thruſt forth into the nervous ſtock, did not enter rightly the beginnings of all the nerves, but chiefly and almoſt only the ſpinal marrow, and its nervous ſhoots; ſo that the internal *Viſcera*, alſo the parts of the eyes, mouth, and face, remained free from any Convulſion: yet, that ſame exploſive force, being hindred by ſome violence, whereby it entred leſs in the outward members, preſently like wild-fire, a way being found, it was wont to run into the *præcordia*, and bowells of the lower belly: *viz.* becauſe the inflowing ſpirits, being ſtruck with a certain fury, and requiring a larger ſpace, in which they might exerciſe their madneſs, being excluded from one place, preſently enter another ſomewhere open: wherefore, if that fury had been repulſed, both from the members, and the *viſcera*, no doubt but it would have flown back on the brain, and brought thither, madneſs, or as it were an Epileptical Inſenſibleneſs: which Symptoms indeed hapned to be wanting, for that the brain of this moſt ingenious Gentlewoman, being indued with a more firm Conſtitution, did take from the nervous Liquor freſhly inſtilled, whatſoever was congruous and ſpiritous, for its proper food, and enjoy'd it: In the mean time, it did depreſs all the morbific particles, into the ſpinal marrow, by which the involuntary motions of the members were excited, after that manner as we ſaid but now.

Being requeſted to undertake the Cure of this worthy Virgin, firſt, a light preparation of her body being made, I gave her a ſolutive potion of the Infuſion of *Senna* and *Rhubarb*, with *yellow Sanders* and *ſalt of Wormwood* added to it, by which ſhe was purged 12 times with great eaſe, the next day I took viii. ounces of blood from her left Arm, every evening I gave her an opiate of the water, and Syrrop of the *flowers of Lungwort*, with the *powder of pearls*: beſides, once within vi. hours, I preſcrib'd her to take a doſe of the *ſpirits of Harts-horn*, in a draught of the following Julap. Take of the *waters of black Cherries, Walnuts*, and the *flowers of Pæony*, each ℥ iii. of the Antipeleptic of *Langius* ℥ ii. of the *Syrrop* of the *flowers* of the *male-pæony* ℥ ii. of the *powder of pearls* ℈ i. mix it and make a Julap: becauſe ſhe could not endure much purging, *Clyſters* with Sugar'd- *The Curatory Method Obſerved in this caſe.*

milk, were made use of frequently: besides antispasmodic oyntments, being applyed to the hinder part of her neck, and the back-bone, we order'd often rubbing of the distemper'd members, with warm woollen Cloaths wetted in proper oyl.

By the use of these, the sick person within 6 days, seem'd to be very much helped; for the Convulsive motions allmost wholly ceased, and she could contain her members quietly in their due position, only her head sometimes by a lighter Contractiou was compelled to bend gently this way and that way; further she was able to stand a little, and rise out of her chair, but when she went to step forward, she went not rightly, but obliquely on one side: At this time going away, I left her much better, and in a manifest state of growing well: But after another week, when the North-winde being high, and arisen in Night time, the window not being fast shut, blew very much upon the sick person being in Bed, she presently taking cold, relapsed into that kinde of Condition, that she became obnoxious not only to Convulsive passions, but to an universal periodical palsie: for after that she was forced to move about, turn, and winde variously, all her limbs successively, with her head, and members by turns, bent, and thrown about here and there (as before) from morning to night; till at night these kinde of motions wholly ceasing, a resolution of her members, or palsie succeeded, so that she was not able to stir either hand or foot, or any other part of her body besides, or to exereise any motive bending of the body, lying in her bed allmost immovable like a stone; but being a little refresh'd with sleep, about morning, as she recovered some little strength or virtue of the regular motive faculty, by bending, tho but weakly here and there, her arms, and legs, so also the involuntary, and Convulsive motions, did constantly return, enduring from that time, all the day, which again at the Evening, were changed into these resolutions of the Limbs.

By these it appears clearly, that the sick Gentlewoman laboured with a twofold disease, *viz.* a Palsie, and Convulsion, and that the materiall Cause of either, was somewhat distinct: For it seems, that the animal spirits, every where abounding, being burdened with narcotick particles, were almost continually bound: besides that, in the time of sleeping, together with the nervous juice, the Convulsive particles, plentifully flowing in, clove also to the spirits: for the explosions of which, the spirits being incited, produced the involuntary motions: but also at that time, the narcotic *Copula* being somewhat shaken off, they were then able in some sort to perform the voluntary or regular also: Besides the Remedies but now recited, they did carefully administer very many others, allmost of every kinde, *viz.* Antiscorbuticks, antiparaleticks, Decoctions, sudorificks, or sweating medicines, distilled waters, spirits, Elixirs, Tincture, Baths, Liniments, with many others; by the use of which, the Symptoms were something remitted, but yet the disease was not wholly cured, the universal palsie soon ceased, that she was able at any time to move her Limbs, and to bend them here and there; and also the involuntary motions did trouble her but rarely, yet she continued Languishing, and weak; and when she being of a more fine temper, and prone to a Consumption, by reason transpiration was hindred, the recrements of the bloods being laid up in the Lungs, brought in a Cough, which every day growing worse, she at length dyed of a *Phthisis* or wasting.

2. *Observation.* Some years since, I was sent for to a Noble Virgin, sick almost after the same manner, and something worse: For this suffer'd almost perpetually, coming by turns, involuntary motions, to wit, shakings of the head, and members, or deflections, or movings about here and there: besides, she was afflicted with an exceeding troublesome, and plainly wonderfull Convulsion, of the *Diaphragma*, and muscles serving for breathing: for every minute of an hour and oftener, her back-bone was suddenly bent in, about its middle, and together her breast shooting out forward, and her *hypochondria* being drawn inwards, she made a noysie sobbing, now double, now threefold, but still with a less and less noise: this kinde of motion, and ebbing of a crashing noise, was wont to come for many hours [illegible] so that she might be heard through the whole house; and when any short [illegible]rval of this hapned, she was compelled presently to shake, or writhe together extreamly her arms, and hands, and sometimes her legs, and feet, and also to fling about most furiously her head, and by and by to hold her neck

neck, as it were ſtiff and immovable: and then in ſpeaking, her tongue would be taken after that manner, that ſhe would repeat the ſame word very often, yea ſometimes twenty times at leaſt: when the Convulſive motions tormented her ſtrongly in her outward members, ſhe was free for a little while from that throtling, and noiſie diſtemper, and this ſpace of intermiſſion ſhe call'd her time of eaſe; tho in the mean time, her head, and members were carried violently here and there, with Convulſive Motions: if at any time ſhe lay on her left ſide, preſently a contraction of her right *hypochondrium* inwards, with a ſobbing or throtling, vex'd her. Within a few days, her ſtrength being very much loſt, by the aſſiduity of the paſſions, ſhe contracted ſo great an imbecillity in her Loyns, and joynts of her legs, that ſhe could not ſtand, nor lean on her feet: Her Stomach, diſtemperd either with weakneſs, or the Convulſion, retnrn'd back whatever was put into it, by vomit.

The nature and cauſe of the diſcribed caſe.

In this Caſe, as in the former, it appears, clearly, that the Animal ſpirits, not only thoſe implanted in this or that part or region, had contracted an heterogeneous *Copula* to be ſhaken off by ſome turns, but alſo the ſpirits influencing ſome nerves, being imbued with exploſive particles, had brought in the perpetuall, and wandring Convulſive Motions. And when at firſt it hapned, that the ſpirits ſo afflicted, did aſſolt, not all the nerves together, nor any indifferently, but for the moſt part, only thoſe belonging to the *Diaphragma*, and the *Appendixes* of the ſpinal marrow, ſo that within thoſe ſpaces, the fury of the ſpirits, perpetually exploſing, was limited, for this reaſon it hapned, that the convulſive affections being reſtrained, in any one of thoſe parts, did break forth more furiouſly ſtrait in another; and when by their proper inſtinct, their motive force was imployed in one Region, the ſame was in the mean time, wont to be remitted in another. Moreover in this ſick perſon, the morbific matter, conſiſting both of narcotick and convulſive particles, cauſed together the paralytick, and convulſive diſtemper.

Coming to her on the 4th day, I gave her an Emetick potion, by which ſhe vomited 7 times, abundance of ropy phlegm, with yellow choller, yet without any eaſe: on the next day, I took ſix ounces of blood, from her left Arm, preſently from thence, the blood being more impetuouſly carried, towards the head, ſhe complained mightily of an head-ach, and giddineſs; But within 3 days ſhe being let blood in the foot, found her ſelf better: ſhe afterwards took Remedies for the diſtempers of the nerves, to wit, *ſpirits of Harts-horn*, and of *blood*, *Bezoartick* and *ſhelly powders*, *Julaps*, and *Electuaries*, antiſpaſmodical: by the uſe of theſe, the Symptoms ſeem'd to be ſomething remitted, but yet they remained ſomewhat after the manner but now deſcribed: After a fortnight, by the preſcription of a certain Country-Woman, ſhe took in a draught of beer, 6 ſpoonfulls of *blood*, taken from the ear of an Aſſe, by which ſhe ſeem'd on a ſudden to be cured: for forthwith all the Convulſive motions did leave, and ſhe remained free from them 24 hours; but yet the diſeaſe returning the next day, with its wonted fierceneſs, would not give place, neither to that Remedy, nor indeed eaſily to any others: ſhe therefore for the future, took medicines methodically preſcribed: Once within 6 days, ſhe was gently purged, beſides ſhe took the powder compoſed of *Bezoar*, *pearls*, and *Corrall*, with the roots and ſeeds of *Peony*, alſo an Electuary, preſcribed by *Horſtius* for theſe kinde of admirable Convulſions; alſo *Julap*, and *decoctions*, proper in convulſive Diſtempters: *Clyſters* were often uſed, frictious, oyntments, and veſicatories were adminiſtred with ſucceſs: within another week, the ſobbing affection wholly ceaſed, and likewiſe the other convulſive motions, being grown more gentle by degrees, very much remitted: Growing well of theſe diſtempers, a *Catharr* falling down in her throat, ſhe was ſo much troubled, that ſhe almoſt continually ſpit forth a ſharp, and as it were Corroſive ſpittle, as if ſhe had had a ſalivation by taking *Mercury*: which kinde of Remedy indeed, hath been found to have been the laſt event in this caſe: but I wholly abſtained from adminiſtring it, becauſe both the ſick, and her friends, would not give me leave.

After this plentifnll, and troubleſome ſpitting had continued for many days, the diſeaſe ſeem'd almoſt to be wholly Cured: ſo that this noble Gentlewoman, being free of her Convulſive motions, went abroad, and was well, both in ſtrength and ſtomach. Only ſhe complained, that oftentimes in a day, ſhe

was

was ſuddenly afflicted, for about a minute of an hour, with a ſhivering of her whole body; which kinde of Diſtemper coming upon her ſometimes in the night, broke her ſleep: within the ſpace of a month, this Symptom alſo, and likewiſe her Catarrh wholly ceaſed: But from thence, ſhe was ſometimes afflicted with an extream Soureneſs, in her ventricle, and the paſſage of the *Oeſophagus*, and ſometimes alſo in her mouth, and pallate, that it was feared leſt the inward skin being fretted, thoſe parts ſhould Contract an ulcerous diſpoſition; beſides ſhe was wont to be tormented often in her ſleep, ſometimes alſo being awake, with the night-mare or *Incubus*. For this I preſcribed, *Spring* and *fall*, a gentle purge to be adminiſtred, with the uſe of antiſcorbutick Remedies, and ſometimes *Chalibiates*, or medicines of *prepared ſteel*, which kinde of method ſhe obſerved ſo much to her benefit, that ſhe was well in health for many years, and is as yet well.

Among the many Remedies, which were taken againſt that Sourneſs, and as it were ulcerous diſpoſition of the pallat, and *Oeſophagus*, I preſcribed, that ſhe ſhould drink every morning, her own urine freſh made; this, whilſt it was very Saltiſh, was wont to give her great eaſe; but at ſometimes, her urine flow'd from her thin and plentifully, which being nothing ſalt, but like to ſour vinegar, from the drinking of that ſhe received little or no benefit.

The *Reaſon* of the Caſe but now deſcribed, ſeems not much unlike the former, unleſs that in this ſick Gentlewoman, the explosive particles had enter'd into more paſſages of the nerves, to wit, beſides the *appendixes* of the ſpinall marrow, into thoſe dedicated for the office of breathing, and alſo by fits, into thoſe deſigned for the motion of the Tongue, and almoſt perpetually tormented the Spirits abounding in them, with Rage or fury.

But that the Cure of this Diſeaſe hapen'd, by the falling down of the ſharp humour, into the emunctories of the mouth, and throat, we may from thence gather, that the material Cauſe of this, was the heterogeneous particles, and as it were nitrous, begotten in the blood; which, when from thence, being paſſed thorow from the brain, they were carried into the nervous ſtock, cauſed the aforeſaid Diſtempers: But aſſoon as by the help of Remedies, the more plentifull proviſion of that matter was hinderd, and the morbifick particles allready produced, both from the blood, and the Brain, and nervous ſtock, were derived into thoſe emunctories of the head, the Convulſive Diſtemper preſently ceaſed, and within a ſhort time, ſuch a Criſis or ſecretion ſtill remaining, the perfect Cure of the Diſeaſe followed.

Foraſmuch as the urine, being of it ſelf very ſalt, and as it were lixivial, became at ſome times ſouriſh, which did not give any help, as the former, to the ſourneſs of the throat: it may hence be gathered, that the ſalt particles of the blood, and humours, coming away by the urine, had a twofold ſtate or condition, to wit, of fixedneſs, and fluedneſs; wherefore the ſerum, imbued by them, became now of this, now of that nature: for it ſeems, that the Saline particles, being degenerate within the maſs of the blood, remained fixed, and rendred the urine for the moſt part Lixiviall: but thoſe which flowed without the blood, in the nervous juce, or were laid up about the ſolid parts, did degenerate into a flux or acetouſneſs: and therefore from theſe, being derived into the emunctuaries of the mouth, that noted ſourneſs of the mouth, and *Oeſophagus* proceeded: moreover, when theſe kinde of particles, being gathered to a fullneſs in the nervous juce, and ſolid parts, did ſwell up, and ariſing to a fluxion, boyled up into the blood: preſently theſe being ſent away from thence, in heaps, thorow the Reines, rendred the urine, increaſed in quantity, ſouriſh. But foraſmuch, as the Saline particles, being of a divers Condition, and that thoſe of the ſame kinde could not be mingled together, they mutually moved againſt one another, and break their forces, therefore the ſalt urine, and not the ſour healed the ſourneſs of the throat. It appears by a vulgar experiment, that the moſt ſharp *Spirit of Vitriol*, by the mixture of the *Salt of Tartar*, or any other lixivial, grows very milde: yea, and yet from thence appears, that the acid humour, ſweating out into the parts of the mouth and throat of this Gentlewoman, came near the nature of ſharp *Vitriol*; becauſe the fume of Tobacco, being taken at the mouth of the ſick perſon, was wonderfully ſweet, as it happens to ſuch, who have beforehand taſted *Vitriol*.

Becauſe

Becauſe we treat here of admirable Convulſions, which do not ordinarily happen, and whoſe nature, and cauſes ly deeply hid; for the better illuſtration of theſe kinde of Diſtempers, we will yet ſhew one or two more Caſes, no leſs wonderfull than the former.

About ten years ſince, I viſited the daughter of a certain Nobleman, troubled after that manner with Convulſive motions, that ſome thought her poſſeſſed with an evill Spirit: This Virgin about 16. years of age, fair, and well-made, yet begotten of a paralytick Father, without any evident Cauſe, about the winter-ſolſtice began to fall ill. At firſt ſhe was troubled, though not in any grievous manner, with an head-ach, and giddineſs for many days; then ſhe felt, now in one of her arms, and then in another, a trembling and ſudden Contraction; which kinde of Convulſions, returning often that day, endured ſcarce a moment; the next day ſitting nigh her Siſter in a Chair, ſuddenly leaping out, ſhe fetch'd one or two jumps, and many others ſucceſſively, with wonderfull agility, at the diſtance of many feet; then, when ſhe was come to the farther part of the Chamber, ſhe ſtood leaping a great while in the ſame place, and every time to a great height; when her legs were quite tired with leaping, ſhe fell on the floor, and preſently ſhe flung her head here and there with wonderfull violence, as if ſhe would ſhake it from her neck: As ſoon as ſhe ceaſed from this motion for wearineſs, preſently the ſame fury invaded her hands and feet, ſo that ſhe was forced ſtrongly to exerciſe theſe members, by ſtriking the walls or poſts, or by beating the pavement: when by reaſon of ſhame or modeſty, due to her friends, and by-ſtanders, ſhe did hinder her ſelf with great violence, from theſe motions (for all the while ſhe was her ſelf, and ſpake ſoberly) the diſtemper being ſent inwardly, ſhe was very much infeſted, with a mighty oppreſſion of the heart, with a bemoaning and very noiſefull ſobbing; then, when ſhe would eaſe her ſelf, ſhe was forced preſently, the fury being tranſmitted to the muſcles of the outward Limbs, either to leap about, or to fling here and there cruelly her head, or arms, or alſo to run about the Chamber, moſt ſwiftly, or to beat the ground with her feet: becauſe theſe kinde of vehement motitions, of her Limbs or *viſcera*, in the Tragedy of the diſtemper, did mutually relieve themſelves, returning as it were in a round.

3. Obſervation.

Coming the 5th. day after this Lady had been ſick, I gave her a vomit of the infuſion of *Crocus Metallorum*, *wine of ſquills*, and *ſalt of Vitriol*, by which ſhe vomited 7 times, cancker'd oile or choller, in a great plenty, with the mixture of a ſharp, and as it were vitriolic humour: The next day ten ounces of blood was taken from the *Saphana* vein; beſides, ſhe took twice in a day, antidotes of the *powders* of pretious Stones, of *humane ſkull*, and the *root* of the *male peony*. By the uſe of theſe, within a week, ſhe ſeem'd to be cured, ſhe continued for many days afterwards free from the aforeſaid diſtempers: Bnt after two weeks at the time of the full Moon ſhe fell into a relapſe of the ſame diſeaſe more cruell than before, for beſides thoſe wonderfull leapings, and vehement Converſions and roulings about of her head and members, ſhe was forced beſides, to fetch often a moſt rapid courſe round about the Chamber: ſhe began at this time, from the præſcripts of others, to take anti-hyſterical Remedies, and purges at certain ſet intervalls, but without any help: At laſt, I being ſent for, becauſe ſhe ſeemed indued with a ſtrong habit of body, and with a notable fierceneſs of ſpirits, I gave her a ſtronger Emetick, by which ſhe vomited forth ten times, greeniſh Choller, like to ruſt, with phlegm, ſharp like ſtygian water, and ſhe was ſuddenly eaſed: After this, I gave her every morning, a draught of white-wine, dilated with the *water* of *black Cherries*, with ſows or hog-lice bruiſed and infuſed therein, and ſtrongly preſſed forth. By the Uſe of theſe, ſhe ſeem'd preſently to be cured, and was well above a Month: And when afterwards, the diſtempers being about to return, ſhe felt at any time ſome forerunners, preſently by the uſe of a vomit, and the expreſſion of the *Millepedes* or *Cheſlogs*, ſhe averted the approach of the Diſeaſe: within three months, ſhe ſo far recovered her former health, that ſhe has now liv'd for many years, free from thoſe kinde of Convulſive diſtempers: But from the time the convulſive paſſions wholly ceaſed, ſhe was ſometimes troubled, about the parts of her mouth, and throat, with a defluxion, of a moſt ſour humour, like the vitriolick *Stagma*; beſides ſometimes ſhe was obnoxious to the *Pica* or longing of women, and at ſometimes alſo to the Cough,

The Curatory Method.

Cough, with a discolored spittle, threatning a Consumption, notwithstanding which, by remedies used in these kinde of Cases, she was easily cured.

The reasons of aforesaid case. As to the Ætiologie, or Rational account of the aforesaid Case, there is no reason that we should fear to refer both the Causes, and Symptoms of this disease, to the explosive particles (the brain being pass'd thorow without hurt) sent as a supply, Continually from the blood, into the nervous stock; which, forasmuch as they being poured forth in great plenty, were not restrained within private mines, to be struck off only by turns, cleaving every where, both to the implanted, and inflowing Spirits, forced them, as it were inspired with a madness, to be perpetually exploded, and to grow raging here and there, by bands: so that indeed, they were not able at all to be ruled; within the containing parts, but there was need to overthrow, and to tame them, impetuously tumultuating, and apt to be carried here and there, like a whirlwinde, by some very violent and strong exercise. In truth in was in this sick person, as it is in musical Organs, which if filled above measure, by too great a blast of winde, unless presently the passages of more Pipes be opened, the whole frame of the Organ is quickly shaken, and in danger to be broken to pieces: In like manner in this Lady, when the animal Spirits, actuating the pipes, and the depending *fibres*, of some of the nerves, were moved beyond their due tenour, there was a necessity, that their force should be bestowed on many vehement local motions together, whilst they inflated above measure the nervous bodies: wherefore, when their madness was hindred in on part, by and by like winde pent up, creeping somewhere else, it broke forth more violently, in some other part.

In this sick person, the use of one or two Vomits, brought help once or twice, because that by it, what was lodged in the gallie-vessell, yea the *glandula's* and emunctuories, and also about the *viscera* of concoction, being by this means emptied, the purging of the blood, and nervous juce, were more Copiously drawn into the same place; therefore indeed, that the animal Spirits, flowing within the Pipes of the distemperd nerves, might be less infected by them: By this reason also, the juice of the Sows or hog-lice was beneficial, forasmuch as it derived the morbifick matter, from the nervous kinde, to the urinary passages: Besides these Remedies, the Root and in a great part the branches of the morbific matter being cut off, and when others, as it were antidotes, hindring every where its vegitation, were carefully administred, whatsoever was left of it, Nature at length becoming superior (as she is wont in these criticall Cases) sent away, to the sinks of the mouth and Throat.

4. Observation. Whilst I was writing these things, I visited an illustrious Virgin, who was troubled with other kinde of Convulsive motions, and those universal, and no less to be admired: she was about 18. years of age, hansome, and well made, and before this time healthfull; when the Pestilence raging in this neighbourhood, she had come within the danger of its Contagion, she fell into a panick fear, with frequent swouning; the night fellowing, she suffer'd so great a *deliquium* or sinking down of her Spirits, and insensibility, that she seem'd just a dying: hardly strugling with so great an evill, afterwards she had every day Convulsive fits, though at first at uncertain hours, and returning after a manifold Kinde: But within a short time, its comings being made regular, twice in a day, to wit, they constantly returned at eleven of the clock, and before five in the afternoon, that no intermitting feavour, kept more exactly its periods; yea, also, the same accidents of the fit dayly chanced after the same manner.

When she had thus been sick for three weeks, one day I was sent for, that I might take notice of all the Symptoms, and the whole figure of the disease: she being up about ten in the morning, was well, in her Countenance, going, and speech, she behaved her self exceeding well, so that none would ever suspect her to be sick: at eleven of the clock, she began to complain of a fullness of her head, and numbness of Spirits, with a light swimning; by and by she felt a great pulsation, and as it were the leaping of some live animal, in her left *hypochondrium*: putting my hand on her side I plainly perceived this motion; then a stretching and belching followed, which done, she was presently put to bed, and a maid siting upon a pillow held her down; who during the fit, most strictly grasped the sick person, holding her to her bosom, with her arms foulded about her wast: besides servants were ready, and her relations standing by, who now press'd down her

her belly, and *hypochondria* rising up, and swelling to a great bulk, now held her hands and arms. The chief Symptoms of the Disease, which being excited by turns, almost divided the whole fit, were these two, *viz.* one while Cruel Convulsions of the Bowells did infest her, so that the *abdomen*, rising up into a mighty bulk, strove against the hands of the by-standers, held upon it, that it could not be pressed down; and at the same time, her *Præcordia*, being contracted upwards, the motions of her blood and heart, were almost stop't: in which space of time, this virgin, her head falling down, with a small pulse, and almost without voice, lay nigh sensless; after two or three minutes of an hour, these Convulsions ceased: and then the sick person, setting her self upright, look'd about cheerfully, and for a while, the force of the disease changed into talking and singing, both of which she without ceasing performed, most pleasantly and most elegantly, beyond her proper capacity: with these kinde of speeches, and pleasant jests, she fell upon all the standers by, that nothing in a Comedy could be more pleasant; then she utterd most sweet tunes of musick, and more pleasant, than any other could, or her self at another time: After she had past six or seven minutes of an hour, thus jesting and singing, the Convulsions of her Bowells and *Præcordia*, and the want of speech, came upon her as before: and these soon remitting, the force of the Spirits leaping back, from the inferior nerves on the brain, it was lastly imployed in the pleasantness of speech and Songs; as often, when she talkt to the by-standers, as any of them replyed any thing bitterly or reproachfully, she fell into those most grievous, and longer continuing, Convulsions of the *Viscera*: After this manner, she was wont to be molested, with an alternate distemper of the Bowells, and brain, about the space of an hour: Then towards the end of the *Viscera*, the fit declining, more light Convulsions being made, they repeated three or four times without any intermission, then these wholly ceasing, the force of the disease brake forth into her outward members, from whence it quickly vanished: for her Arms and Legs, for a minute of an hour, suffer'd leapings forth, and Contractions; presently after, the sick person being taken up, left her bed, free from all Convulsion, till a new fit returned; yea, indifferently well in strength, she walk'd about the house, and during the interval of her distemper, she cheerfully performed the accustomed Offices of Life, excepting that her stomack languish-ings all day she loathed food, in the evening, after the second fit, she supp'd moderatly.

This was the present state of the Disease, in whose fits, the more clear use of some faculties, seem'd in a manner to Compensate the irregularity of others: But about the beginniug of her sickness, it was somewhat otherways: for the Convulsions of her bowells, were far more grievous, and an insensibility was joyned to them: besides, in their intervall, talking idly, an incongruons singing, yea both laughter and weeping, without any known reason, breaking forth, were wont to follow one another: but now, the animal Spirits being forced into longer explosions, performed them so regularly, now this, now that, as a more Commodious way was made, that they seemed after a manner, to be done by the Command of the will, and of Reason.

That we may therefore, according to our *hypothesis*, frame an *Ætiology* or rational account of this Distemper; In the first place, it seems, that a vehement fear, did drive the Spirits inhabiting the brain and *Præcordia*, into great disorders: so that, they being disturbed out of their ranks, both the kinde of madness or foolishness, and the frequent swooning succeeded: Further, it may be suspected, that from the same impression, the hurt was carried to the brain it self, so that its conformation being somewhat vitiated, the heterogeneous and morbific particles, were admitted together with the nervous juice: Then, although the spirits at the beginning, being confused and troubled, after their short inordinations, at last recovered themselves, and performed the wonted offices both of the animal and vital function; yet by reason of the taint, impressed on the brain, the heterogeneous particles being constantly admitted, cleaving to those Spirits, induced explosive endeavors, as soon as the spirits were filled to a plentitude, with the extraneous *Copula*, they being irritated, entred into Convulsive explosions for the shaking or striking it off. *The reasons of the aforesaid Distemper.*

About the beginning of the Disease, when both the Disposition of the Brain,

and the Spirits inhabiting it, was more perverſe, and vitious, from the freſh received hurt, a fullneſs of the heterogeneous *Copula* ſooner happened, and ſo its exploſion following more often, and more inordinately, was diſpatched with greater tumult; But afterwards, when the hurt of the animal regiment abating, the ſupplements of that *Copula*, even as the nervous Liquor, were dayly brought in with an equall dimention, the exploſions of the Spirits being made regular, and more milde, obſerved their juſt periods or ſet times.

That ſhe felt, upon the approach of the fit, a fullneſs and as it were an inflation in her head, with an heavineſs, and dullneſs of the ſpirits, the Reaſon is, becauſe at this time, the ſpirits inhabiting the brain, being now prepared for exploſions, were wont firſt of all to be moved, and as it were to ſwell up; then that pulſation in her left *hypochondria* ſucceeded; for that the Spirits inhabiting the nervous foldings, and *fibres*, thickly planted about the Spleen, began to be exploded: afterwards, when the Spirits flowing both within the meſenteric, and Cardiac enfoldings, were exploded together, thoſe elevations, and as it were leapings up of the *Abdomen*, and *Thorax*, were induced: and when in this diſtemper, the motions of the blood and heart were almoſt wholly ſtopped, therefore there was a ſmall and almoſt no pulſe, and ſhe became Speechleſſe, and in a manner ſenſleſs.

The Convulſion of the *Viſcera* and *Præcordia* remitting, a pratling and ſinging ſucceeded, becauſe a falling down or removal of the Spirits as yet exploded, being made from the nervous ſtock, into the brain, it changed the Convulſions into an exaltation of the fancy, and more ready exerciſe of the phantaſms, or Repreſentation of the Imagination: So long as the Spirits, within the middle of the brain, are regularly and orderly exploded, they bring forth the Acts of the habits and faculties ſo much more noble, and as it were above the ſtrength, and tenour of Nature, as in this ſick Gentlewoman: but on the contrary, when the exploſions of the Spirits in that Region, happen to be inordinate, they cauſe for the moſt part fooliſhneſs, or at leaſt the exerciſe of their powers, are incongruous and abſurd.

The Convulſions of the Bowels, and the phantaſtic actions, releiv'd one another mutually, and by turns, becauſe plenty of Spirits, being diſpoſed to be ſtruck off, made their tendency, as it were with a direct and reflected waving or undulation, now on this part, now on that by turns: then laſtly, when they were almoſt all exploded, the more often Convulſions of the *Viſcera* were ſtir'd up; and when a ſmall handfull only remained to be exploded, that being at laſt excluded, both from the head and bowells, it ran forth into the ſpinal marrow, and employed the laſt aſſolt of the diſeaſe, in the Convulſions af the Arms and Legs.

There yet remains one great difficulty in this Caſe, why the fits of this diſeaſe, were always repeated exactly at ſet hours, and yet had ſo unequall periods, to wit, that the Coming of the firſt, was only but ſix hours before the ſecond, and then the return of the next, did not hapen but in 18 hours ſpace. For the ſolving of this, it is to be ſuppoſed, that theſe fits did depend upon the nervous juice being ſtuffed to a plenitude, with heterogenious particles: which particles were altogether conveyed thither from the bloody maſs, and the blood did drink up the ſame, from the nouriſhing juice, ſent as a ſupply from the Bowells: Theſe being thus ſuppoſed, we muſt conſider, in what ſpace of time, the bloody maſs is filled with thoſe morbific particles, and then, in what meaſure, it pours them forth into the nervous Liquor. As to theſe, that it may the better appear after what manner it was done, in the caſe of this ſick perſon, you muſt know, that ſhe took in 24. hours ſpace, only at one time, a full meal: to wit, after the ſecond fit was ended ſhe ſupped moderately about 7 of the Clock; the reſt of the day wanting an Appetite, ſhe hardly took any food, therefore it is probable, that the morbific matter, was poured forth together with the nutritious proviſion, into the bloody maſs, chiefly in the night time; and that more plentifully, than that all could preſently be derived, into the nervous Liquor: The heterogeneous particles, which are firſt conveyed from the blood, newly ſatisfyed, into the nervous Liquor, being heaped up to the fulneſs, did excite the firſt fit, the coming of which therefore was longer delayed, becauſe both one ſpace is required wherein the blood, and then another wherein the brain and nerves, are to be filled: after this fit was over, becauſe the blood yet full, containing in it ſelf more

particles

particles, of the ſame kinde, pours them ſuddenly on the nervous juice, therefore the other fit is induced, within thrice the ſpace of the former: but this being ended, becauſe both the bloody maſs, and the nervous juice, are wholly freed from their burthen, the ſick perſon finding her ſelf better, than at any other time, took her food greedily enough; but after that, when to the next following fit, firſt the bloody maſs, and then the nervous juice, ought to be filled with the morbific matter, therefore 10. hours are required for this double task: but forasmuch, as there is only need, for the ſecond fit, that the other particles ſhould be derived from the bloody maſs, yet full, into the nervous juice, therefore for this effect, a much leſs ſpace doth ſuffice, *viz.* of 6 hours.

After I had ſeen this Lady, who had labour'd for many weeks with theſe kinde of periodicall fits, I order'd, that three hours before the ſecond fit, ten ounces of blood, ſhould be taken out of the vein on the foot; which being done, the coming of the fit, in the evening being expected, quite left her, neither did it return at all afterwards; but the other fit, obſerving its former time, dayly returned, till the Patient being let blood, a little before its coming, remained that day free from the diſeaſe, which however returning the day after, according to the ſame manner, exerciſed her for many months: In the mean time, becauſe the cold of the winter was very great, ſhe forbore for ſome time the uſe of remedies: but the ſpring coming on, this honourable Lady being brought to *Oxford*, was Cured by the following method. *The Curatory Method.*

Firſt I gave her this Cathartick, and I took care, that it was repeated every 6th. or 7th. day. Take of the *Sulphur of Antimony*, grains 6, of *Mercurius dulcis* 1. ſcruple, of the *Reſine of Julap* gr. iv. of *ginger* gr. vi. let them be beaten together in a morter, then adde of the *Conſerves of Violets* i. dram, make a *bolus*: It was wont to provoke two or three vomits, and three or four ſtools. The flux of her Terms came conſtantly in great abundance, at the ſet times: wherefore, when the blood ſeem'd very plentifull, and hot, I order'd *phlebotomy* twice or thrice in the midſt betwixt the times of her Terms: Beſides, every day that ſhe did not purge, ſhe took twice in a day, 4 pills of the following maſs, drinking after them, a little draught of the Julap below preſcribed. Take of the *Roots of the male-Paony*, ℥ ß. of *Virginian ſnakeweed*, *Contrayerva*, *Cretic Dittany*, each ʒ i i. of *humane skull*, prepared, ʒ i ß. of an *Elks claw* ʒ i. of *red Corral* prepared, of the *powder of Pearls*, each ʒ i. of the *ſalt of Wormwood*, ʒ ii. of the *ſalt of Corrall* ʒ i. with what will ſuffice of the *ſyrrop of the flowers* of the *male-paony* make a maſs.

Take of the water of the *flowers* of the *male-paony*, of *black Cherries*, and of *Wallnuts*, each ℥ iiii. of the antiepileptic of *Langius*, ℥ ii. of the *ſyrrop* of the *flowers of Paony*, ℥ i ß. of *Caſtor* tyed in a knot, and hung in the glaſs, ʒ i. mix them, and make a Julap.

When ſhe began to loath the Pills, they being omitted, ſhe took twice a day, to wit, in the Morning, and the Evening, about one ſcruple of the following powder, in a ſpoonfull of Julap, drinking after it 4. or 5. ſpoonfulls of the ſame. Take of *Bezar-ſtone*, of either *white Amber*, of *Pearls* prepared, of *red Corrall*, each ℈ i. of *humane skull* ℈ ii. of the root of *Virginian ſnakeweed*, and the *ſeeds* of *Rue*, each ʒ ß. mingle them, and make a powder, let her take ℈ i. Morning and Evening, with a doſe of the above-preſcribed Julap.

Then, when alſo this medicine began to be tedious to her, ſhe uſed the pills, or the *Elixir proprietatis*, and alſo ſometimes for many days the *Spirits of Hartshorn*: At laſt, ſhe began to be helped, by that powder, being daily taken, for ſome ſpace.

In the mean time, whilſt this method of healing was ordained; her hair being ſhaven from her head, it was covered only with a thin covering: She wore upon her Belly, an Hyſterical plaiſter mixed with *Galbanum*: for her ordinary drink, ſhe took a *Bochet* of *Sarſa*, and *China*, the *roots* of the *male-Paony*, and other proper things, infuſed in *Spring-water* and boyled. Within a month, the Fits were ſomething remitted: then, being by degrees made gentler and leſſer, at length they almoſt quite ceaſed: unleſs that at the time of her Terms, one or two fits of the diſeaſe was wont to trouble her: Further ſhe labour'd with an almoſt conſtant giddineſs, and queaſineſs of Stomach; in the middle of the Summer, ſhe drunk *Aſtrop-waters*, for a fortnight, and was perfectly well.

But as for the means in generall, to be ſhown for the Cure, of theſe admirable

it will not be easie to assigne, either fit remedies for this herculean disease, or a certain method of Cure, approved by often experience: for besides, that these like cases are seldome met with, it is likewise observed, that the same Medicines which at this time were helpfull to this sick person, being given to another, or to the same, helpt nothing at another time: The reason of which seems to be, because the cause of the Disease consists in the discrasie, or evill disposition of the nervous juice, which Liquor, is not always perverted, after one and the same manner: But by the manifold combination of the salts and Sulphures, it gets a morbid nature of a various manner and kinde, and oftentimes changes it: wherefore, in the most grievious distempers of this kinde, not the vulgar medicines, taken from the shops or dispensatory, are to be prescribed, but magistralls, as cause arises, according to the appearances of the admirable Symptoms. A gentle vomit, Purge, blood-letting, ought in the first place to be ordained, and to be repeated, as often as shall seem fit. As to specifick medicines also, and appropriate in these cases, when the chief Indication shall be, to mend the temper of the Nervous juice, you may try many, and by their effect judge of their virtues: Therefore it may be lawfull, to try, what the Remedies indued with a volatile or armoniac salt, may effect. For this end, the spirits and salts, of Harts-horn, Blood, soot, and the flowers and spirits of *Sal-armoniac*, are taken: These helping nothing, you must come to Chalybiats or Steel medicines; the tinctures and solutions of Corall and Antimony are given: which kinde of medicines are exhibited, in such a dose, and form, and so often, that some alteration may be made by them, on the whole blood or nervous juce: Further, If successe shall fail in such like, you must then proceed to *Alexipharmaca*, which help against poysons, and the malignancy impressed on the humours: to wit, to institute from these, decoctions, and distilled waters of vegitables, powders, Conserves, and other preparations; and to compound variously some with others, and to administer them diversly. It is likely, that those kinde of medicines, which are wont to be helpfull to such, as are bitten by a viper, or a mad Dog, or that have taken woulfs-bane, or poyson, may be usefull also in the aforesaid Convulsions. It may be lawfull here, according to the example of *Gregory Horstius*, in his tract of the malignant Convulsive disease, and also of wonderfull Convulsions, to prescribe magisterial Remedies, in the form of a purging Electuary, and also of a powder, and Convulsive Antidote, and to compound them variously, partly of simple *Alexipharmacks*, or poyson resisters, and partly of *Antiepileptick*s, or things good against the falling Evil.

CHAPTER. X.

Of the Passions Commonly called Hysterical.

THE hysterical passion is of so ill fame, among the Diseases belonging to women, that like one half damn'd, it bears the faults of many other Distempers: For when at any time, a sicknbs happens in a womans body, of an unusual manner, or more occult original, so that its Cause lyes hid, and the Curatory Indication is altogether uncertain, presently we accuse the evill influence of the womb, (which for the most part is innocent) and in every unusual Symptom, we declare it to be something hysterical, and so to this Scope, which oftentimes is only the subterfuge of Ignorance, the medical Intentions, and use of Remedies are directed.

A description of the hysterical passion. The Passions, which are wont to be referred to this sense or order, are found to be various and manifold; which rarely happen in diverse women, or which come wholly after the same manner: The most Common, and which commonly are said to constitute the formal Reason of the hysterical distemper, are these, *viz.* A motion in the bottom of the belly, and an ascention of the same, as it were a certain round thing, then a belching, or a striving to vomit, a distention, and murmur of the *hypochondria*, with a breaking forth of blasts of winde, an unequall breathing, and very much hindred, a choaking in the throat, a *vertigo*,

vertigo, an inversion, or rolling about of the eyes, oftentimes laughing, or weeping, absurd talking, sometimes want of speech, and motionless, with an obscure or no pulse, and deadish aspect, sometimes Convulsive motions, in the face and Limbs, and sometimes in the whole body, are excited: But universal Convulsions rarely happen, and not unless this disease be in the very worst state: Because, for the most part, the Tragedy of the Fit is acted without Contraction of the members, only in the inferior belly, *Thorax*, and head, to wit, in some of them, or successively in all: women of every age, and Condition, are obnoxious to these kinde of Distempers, to wit, Rich and poor, Virgins, wives, and widdows: I have observed those Symptoms in maids before ripe age, also in old women after their flowers have left them; yea, sometimes the same kinde of Passions infest men, as plainly appeared by the example already shewed.

The causes of the Symptons inquired into.

As to the causes of those symptoms, most ancient, and indeed Modern Physitians, refer them to the ascent of the womb, and vapours elevated from it: The former opinion, although it plead antiquity, seems the less probable, for that the body of the womb is of so small bulk, in virgins, and widdows, and is so strictly tyed by the neighbouring parts round about, that it cannot of it self be moved, or ascend from its place, nor could its motion be felt, if there were any: as to that vulgar opinion, or Reason taken from the vapours, we have often rejected it as wholly vain, and light, for just reasons elsewhere: But we judge, the passions but now described, do neither always, nor at all proceed from the ascent, or the vapours of the womb: and that indeed, other very famous Physitians, have already determined: For in times past. *Charles Piso*, and of late the most learned *Highmore*, have vindicated the womb from all fault; and the passions, which are commonly call'd hysterical, are thought by this latter to arise from the blood, most impetuously rushing on the Lungs; and by the other, from a serous colluives heaped together neer the *origin* of the Nerves. How probable this latter opinion doth seem, shall appear from what follows: But as to the opinion deliver'd by Doctor *Highmore*, concerning this thing, tho it be far from our Custom to contradict any ones opinion, and that it is almost unlawfull for me, to diffent from this famous man; yet, because our Pathologie standing on a contrary *basis*, (viz. the cause of the hysterical distemper being imputed more immediately to the nervous stock, than to the blood) will seem to be only asserted, unless we shew the Reasons, which combat against that *hypothesis*, and forours, therefore taking leave, here we will try more exactly either opinion, put as it were in a ballance.

Doctor Highmores Opinion Examined.

In the fit therefore commonly called hysterical, this famous man supposes, the blood, for that it is thin, flatulent, and with a certain effervescency, to rush too much in heaps, into the pneumonick vessells, and the vessells of the heart, and in them to broyl up impetuously, and so to stuff up the lungs, and very much to aggravate them, that neither they can exercise their motion, nor that the blood can be drained from the bosom of the heart: Hence, from the blood stagnating in the *Præcordia*, a great oppression, difficult breathing, and often none, with a melting of the vital Spirits were wont to be inferred: then the *diaphragma*, that it might give place to the Lungs more and more distended, and that breathing at least might be some way made, is carried downward, with a mighty and long continued *Diastole*, and so by pressing down the Intestines, it lifts up the *abdomen*, and *hypochondria*, and feins a motion as it were the arising of a globe: But afterwards, the vital function labouring after this manner, the animal faculty arises in its aide, wherefore, a necessity of motions, in various parts urging the animal Spirits, being driven impetuonsly into the beginnings of the nerves, produce divers manners of Convulsions, running here and there. The Author endeavours to confirm this Opinion, by the great help in this disease had, by the taking away the bloody excretion, both from things helpfull, and things hurtfull, in this passion.

But though I cannot but praise this Doctrine of the suffocation of the womb, as very ingenious, and cunningly wrought, yet that I do not consent to it in all things, some reasons of great moment clearly hinder me. Truly I confess, that I do not understand, how in some hysterical persons, to wit, who are of a more frigid temperament, and are often troubled with the Pica, and longing disease; the blood should so immoderatly boyl up in the Lungs, without any conspicuous

notes of its growing hot, in some other place. I have known young maids, by reason of the green-sickness, as it were without blood, to wit, whose blood indeed being without life, did remain without any exercise in the heart, and was from thence difficultly enough drawn forth, into the Lungs, who yet were grievously obnoxious to the passions called hysterical: Certainly it is not probable, that the blood of these persons growing immoderatly hot, should rush impetuously into the Pneumonick vessells, and should stuff up their pores and passages very thickly, when in the mean time, such become short-breath'd, by reason of the absence of the blood from the Lungs, or its difficult admission to them: Besides, by what means comes it to pass, that this violent course of the blood into the Lungs, which is supposed to be made in this Fit, brings forth no Inflammation in them? for that the blood, being too much heaped, or rapidly put into any part, is easily extravasated, and is wont to excite an Inflammation hardly to be shaken off. From whence it is therefore, in the hysterical distemper, the blood entring violently into the Lungs, and distending them, does not cause a peripneumonie or Impostume of the Lungs? Or wherefore the distempers as it were hysterical, come not on an Inflammation of the Lungs, otherwise caused? wherefore it seems improbable, that the blood swelling up, with its proper anger or heat, should rush into the Lungs, and by stuffing them, renders them too immovable, and so secondarily and consequently induce Convulsions of the *Diaphragma*, and other parts: but it may rather seem, that by reason of the *Diaphragma*, and other organs of breathing, being first affected with a Convulsion, the blood should be forced to stagnate in the *præcordia*: Besides, it may be observ'd, that the Lungs are not always afflicted before other parts; for oftentimes the convulsive Symptoms begin elsewhere, and not rarely bear the region of the breast wholly untouch'd: Because in some, the *vertigo*, and Corruscations or sparklings of the eyes, begin the fit, to which succeed either weeping, or laughing, or convulsive motions of the Limbs, without any straitness of the breath, or oppression of the heart: in others, before respiration troubles them, any way, a swelling in the bottom of the belly, with a vomiting, and rumbling of the belly, begins and often ends the fit; so that the difficulty of breathing, oftentimes follows these Symptoms at a great distance, and is wont to be prevented, by the tying strictly of swathing-bands, about the *hypochondria*. Moveover, it seems, that this ascent as it were of a certain round thing, from the *Hypogastrium* or lower part of the belly, can never proceed from the depression of the *Diaphragma*; because in the hysterical fit, this part is not always pressed down towards the lower parts, but oftentimes drawn up to the higher parts, and drives the Lungs upwards, so that the spirit or breath being almost shut forth, threatens the danger of Choaking. By these, and other reasons, we are at length perswaded to that opinion, that the distemper named from the womb, is chiefly and primarily convulsive, and chiefly depends on the brain and the nervous stock being affected, and whatever inordination, or irregularity from thence happens, about the motion of the blood, is only secondary, and is made dependingly, by the Convulsions of the Bowells.

The hysterical distemper chiefly belongs to the Brain and nervous stock.

But that this doth consist within the bounds of the head, both the comparing of the symptoms, which happen in the living, and the anatomical observations of the dead, clearly shew; because we may observe, that this distemper often takes its rise, from a sudden fear, great sadness, or anger, or other violent passion, in which the spirits inhabiting the brain are chiefly affected besides, to some an ill manner of dyet, and various accidents whereby the humours being vitiated, are heaped more plentifully within the head, at first brings this evil. Yea, the manner of the fits clearly evinces the same, forasmuch, as a fullness of the head, a *vertigo*, a sparkling of the eyes, a ringing noyse of the ears, begin in many the hysterical fit, and often conclude it: Besides I have opened some women, dead of other diseases, tho while they were sick, very obnoxious to hysterical passions, in whom the womb being very well, I have found in the hinder part of the head, the beginnings of the nerves, moistned and wholly drowned with a sharp *serum*, as shall be more largely declared anon.

Having weighed these, and other Reasons, we doubt not to assert, the Passions commonly called Hysterical, to arise most often, for that the animal spirits, possessing the beginning of the Nerves within the head, are infected with some taint;

taint; to wit, they being either acted or brought into Confuſion, or being tinged with vitious humours, get to themſelves an heterogeneous and exploſive *Copula*, which they carry far away with themſelves, into the Channels of the nerves: and when the ſame ſpirits are filled to a plenitude, with that *Copula*, thorow all their *ſeries* or orders, either of their own accord, or being occaſionally moved, they enter into exploſions, and ſo ſtir up Convulſive motions: But that ſuch a *Copula* adhering to the ſpirits, is chiefly derived together with them, into the interior nerves, the reaſon is, becauſe in this paſſage towards the *præcordia*, and *viſcera*, the animal ſpirits, by reaſon of the diſtemper of the minde, are very much diſturbed; wherefore, they more eaſily admit any evills brought from another place, and more readily conceive irregularities. For the animal ſpirits, chiefly for this occaſion, contract a convulſive diſpoſition: foraſmuch as they, from a violent impreſſion, are perverted out of their Courſes, and their wonted manner of Influence, and acting; hence they not only repeat their inordinations, but alſo receive the heterogenious particles into their embraces, and more eaſily combine with them: Wherefore, foraſmuch as the animal ſpirits, running thorow the nerves of the wandring pair, and Intercoſtals, are continually entangled with all perturbations both of the Concupiſcable, and iraſcible Appetite, it is no wonder, if they acquire a convulſive diſpoſition, before the reſt.

The cauſe of the diſeaſe moſt often begins, about the beginning of the nerves.

It being ſuppoſed (which indeed ought to be ſuppoſed) that the animal ſpirits have contracted an heterogenious and exploſive *Copula*, now the nervous *origines*, and carried it together with it ſelf into the interior nerves, and ſpread it thorow all their paſſages, it will not be hard to aſſigne the Reaſons of the hyſtericall fit, and of all its Symptoms. For firſt of all, the diſeaſe being ready to fall upon one, oftentimes the *Vertigo*, a rolling about of the eyes, and a certain inflation of the brain, as it were prævious skirmiſhings, are ſtirred up, becauſe the whole band of the Spirits, being in readineſs for exploſions, the more light companies of them, leaping back towards the brain, are firſt ſtruck off; then Preſently a perturbation ſucceeds, in the bottom of the belly, or *hypochondria*, for that the Spirits within the enfoldings here and there, are next diſturbed: For we have elſewhere ſhown, if at any time the animal Spirits are exploded, in a certain whole *Series*, thoſe which abode in the extream parts, firſt of all enter into that aſſertion: Wherefore the beginnings of this Diſeaſe, are found to be or the moſt Part, in the head and Bowells: but that the Convulſions are firſt perceived, now in the bottom of the belly, now in the *hypochondria*, the reaſon is, becauſe the morbific matter, is ſometimes carried by the paſſage of the intercoſtal nerve, into the utmoſt meſenteric enfoldings; but ſometimes the ſame, being ſlid down, not beyond the ends of the wandring pair, ſubſiſts much neerer, to wit, about the enfoldings of the ſpleen, or ſtomack.

The ſame cauſe afterward diſpoſed, thorow the whole paſſage of the Nerves.

When therefore the animal Spirits (as hath been ſhown) within the nervs of the wandring pair, and intercoſtals, are imbued from their *origine*, even to their utmoſt ends, with an heterogeneous and exploſive *Copula*; they at length, either from mere fullneſs, or by an irritation ſomewhere made, are ſtirred up to exploſions; in which affection, if any Spirits leap forth towards the middle of the brain, they induce the *Vertigo*, the inflation and other prævious accidents of the head: but the Spirits inhabiting the other extremity of the nervous Trunk, *viz.* the meſenteric enfoldings begin chiefly to be exploded, which preſently by their letting off, compell the lower Parts of the *hypogaſtrum* to be lifted up, and contracted upwards, and ſo induce the aſcention of a certain bulk, as it were of the womb: then, when the upper parts of the enfoldings of the meſentory, are by degrees intangled with the ſame diſtemper, and the bowells annexed to the ſame are elevated, and drawn forceably towards the upper parts, the violent ſwelling of the *Abdomen*, as it were with a certain leaping forth ſucceeds: Further, the Ventricle is not only elevated, by changing its place, all its *fibres*, to wit, the direct, oblique, and tranſverſe, being affected at once, with the Convulſion, is often diſtended like a blown bladder: hence very often vomiting, or at leaſt a rumbling, and murmur of the *hypochondria*, are excited: but as ſoon as the Spirits being exploded, with a certain *ſeries*, it comes to the Region of the *Thorax*, the *diaphragma* being drawn together, with an huge diaſtole is ſometimes depreſſed, and ſo meeting with the aſcention of the *viſcera*, cauſes an Inflation, and high intumeſcency or ſwelling up, with a mighty ſtrugling; ſo that

The reaſon of the hyſterical ſymptoms unfolded.

the

the laces of thoſe in this diſtemper, muſt be forthwith looſned, or elſe they are in danger of falling into a trance: In the mean time, the *Diaphragma* being ſo depreſſed, and its diaſtole continued, the bloud remains almoſt immovable in the *præcordia*: and ſo by its ſtagnation, cauſes a great oppreſſion, and very often a failing of the vital function: Further, the Convulſion of the *Diaphragma*, happens ſometimes towards the upper parts, and ſo, that driving the Lungs upwards induces a violent Syſtole, and protracted longer than it ſhould be; and when by this means, the blood is driven forward, into the pneumonic veſſells, and is not at laſt received from the boſome of the heart, it ſtagnates there, and beſides in the whole Body; from whence the oppreſſion of the heart, and oftentimes a ſwooning, yea ſometimes a want of ſpeech, and motion, now with a blewneſs of the face, and now with a dead aſpect follow: After theſe things are acted in the lower, and middle Region, at length the diſtemper reaches to the head, by the paſſage of the nerves, as it were a fiery inkindling, and the ſpirits being there exploded leaping now towards the middle of the brain, produce a ſwimming in the head, and often ſymptoms very like the *Epilepſy*; ſometimes the ſpirits there exploded, ruſh into the beginnings of the other Nerves, and there ſtir up the like exploſions; wherefore, hyſterical people, towards the end of the fit, often Laugh, or weep, or talk idly; ſometimes the parts of the face, and mouth, yea, ſometimes the arms, and other members, are troubled with convulſive motions, and ſo, when at length all the ſpirits, which had contracted an heterogeneous *Copula*, are exploded, the fit ends; but preſently after, matter for another fit, begins to be gathered together.

From whence the diverſity of the ſymptoms happens.

It ſometimes happens, that the convulſive diſpoſition is not drawn out ſo long, and largely, for beſides that oftentimes the nerves only of the wandring pair, and the intercoſtalls are troubled with it, that neither the brain, nor the outward members, are at all moleſted; yea ſometime, neither the interior nerves themſelves, are poſſeſſed with the morbific cauſe, thorow their whole proceſſes: for the convulſive Diſpoſition (as we but now intimated) oftentimes arrives not beyond the enfoldings of the ſpleen, or ſtomack, and then the fit beginning from the inflation of the *ventricle*, or left *hypochondrium*, is thought to ariſe, not from the fault of the womb, but of the ſpleen: which kinde of diſtemper, by and by being brought to the Thorax, and there involving the *Diaphragma*, and Lungs, with a Convulſion, ſtops reſpiration, and the motion of the heart, or in ſome manner perverts it: but then from thence, the fit paſſes over; now with, and now without a great perturbation of the Head. Theſe things happen indeed after a various manner, according as it happens, that the morbific matter, or exploſive *Copula*, deſcending from the head, is gathered together, as it were heaps of gun-powder, more or leſs, now in this, now in that part! But concerning which matter, by what means, the ſame being brought forth in the head, firſt affects the beginnings of the nerves, and ſo conſtitutes the procatartick, or more remote Cauſe of the paſſion called Hyſterical, now remains next to be inquired into.

The more remote Cauſe of the diſeaſe ſubſiſts, either nigh the beginnings of the Nerves.

As to the morbific matter or exploſive *Copula*, which cleaving to the ſpirits, flowing within the head, and with them derived into the nervous paſſages, is often the cauſe of the diſtempers, commonly termed of the Womb; we ſay, that this, as in other kinds of Convulſions, is the heterogeneous particles, poured forth from the blood, which yet are wont to be affixed to the ſpirits, flowing into the beginnings of the nerves, cheifly for two cauſes: to wit, either by the fault of the ſpirits themſelves, or by the force of the matter it ſelf, inſtances of either kinde, are ordinarily met with. It ſometimes happens, that the animal ſpirits, planted within the brain, and in the paſſage leading from it, to the *præcordia*, are very much diſturbed, by a ſudden paſſion, as of fear, anger, ſadneſs, *&c.* And forced into diſorders; and that by that means, they being driven out of their orders, do acquire to themſelves heterogeneous particles, whereever met with; and combine with theſe, that by and by, for that reaſon, they acquire an exploſive diſpoſition, as we have already declared. Further in the ſecond place, ſometimes the morbific matter it ſelf, being made more fierce and ſtrong, in ſpite of the ſuccour of the animal *Æconomie* or rule, is poured forth into the brain, and its appendix, from the bloody maſs, which cleaving faſt to the ſpirits, preſently diſpoſes them into exploſions: This is ordinarily diſcerned

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in the evil criſes of feavours, alſo in ſome malignant diſtempers, alſo in Scorbutic and other Chronical diſeaſes ill cured. An ill, or weak conſtitution of the brain, or nervous ſtock, whether it be hereditarie, or acquired by reaſon of an ill manner of living, very much cheriſhes theſe cauſes. For in bodies ſo diſpoſed, both the animal ſpirits, from every light occaſion, are moved in Confuſion; and the paſſages of the brain, and nervous *Syſtem*, more eaſily lye open, for the running in of the heterogeneous, and exploſive matter. In truth, for this reaſon, women are more obnoxious to convulſive diſtempers, than men, and ſome women then others, as we will ſhew more largely hereafter.

But altho theſe kinde of paſſions of women, called hyſterical, moſt often proceed from the fault of the head, or from the morbific cauſe, ariſing within the *Encephalon*; yet ſometimes, ſuch diſtempers are ſtirred up, by reaſon of a Cauſe beginning ſomewhere elſe, *viz.* Now in the womb, now in the other Bowells; and of this Convulſive Pathologie, there are chiefly two heads, *viz.*

Or near the womb, or other Inwards.

1ſt. Sometimes it happens, that a Tumour, or an ulcer, or a congeſtion of ſharp humours, ariſes in the membranous parts, about the womb, or planted about the other *Viſcera*, and often irritates the parts ſo diſtemper'd, by reaſon of the breaking of the union, into painfull Convulſions: then foraſmuch as the animal ſpirits, placed round about, and thoſe inflowing, are moved iuto frequent diſorders, they at length, getting to themſeves heterogeneous particles, ſent either from the diſtemper'd part, or from ſome other place, are diſpoſed to convulſive aſſaults, and when firſt of all, the convulſive motions happen only in the neighbourhood of the affected place, to wit, that the bulk aſcending in the lower part of the belly, or its ſwelling up be only perceived; afterwards they are propagated by the paſſage of the nervous bodies, and by the conſent of the convulſion there begun, leaſurely into the other *viſcera*, of the lower belly, then to the *præcordia*, and laſtly into the head it ſelf; and the diſtemper, being thus by little and little delated to the ſpirits inhabiting the brain, they moreover having gotten in their proper Sphear, an heterogeneous *Copula*, retort the ſame back to the *viſcera*, and ſo the morbific cauſe, being made reciprocall, is begun at either end of the nervous Trunk. Some time paſt I have ſeen a noble virgin, in whom a ſmall Tumour ariſing, with moſt cruel pain, below the *Os pubis*, did ſtir np huge Convulſions; firſt in the lower belly, and afterwards aſcending to the *Præcordia*, and head, were at length ſtretch'd to the outward members: for once or twice in a day, after that great pains did torment her in the affected part, the *abdomen*, and by and by the *hypochondria*, were wont to be lifted up: then difficulty of breathing, on an Inſenſibility ſucceeded, and preſently the diſtemper being brought outwardly, moſt horrid Convulſions, and Contractions of the members, and Limbs followed. Sometimes it alſo happens, that convulſive ſymptoms are induced in Child-bearing women, by reaſon of ſome hurt or evill brought to the womb: *Harvie* Relates, that wonderfull convulſions were cauſed by the injection of ſome ſharp thing into the womb: So ſometimes, tho rarely, it happens, that a morbific matter or exploſive *Copula* is fixed to the ſpirits dwelling about the extremities of the nerves and near the womb, immediately from the place there affected and without fault of the brain.

This laſt happens after a twofold manner.

Either by reaſon of the diſſolution of the union.

There yet remains another caſe, or manner of affecting, by which the convulſive diſpoſition is produced from the fault or the parts, lodg'd at a great diſtance from the brain (tho in the mean time, the taint, which is the cauſe of this diſtemper, is often mediately communicated to the brain it ſelf) to wit, when at any time, the nervous juice is hindred ſomewhere, in its motion or circulation, from thence ſtagnating in the nervous parts, and loading them, does often bring in a convulſive diſpoſition: So, when ſome uſual Evacuation, whereby the ſuperfluities of the nervous Liquor, were wont to be ſifted forth, is ſtopp'd, as from Iſſues ſuddenly ſhut up, or old ulcers dryed up without a purge, many fall into convulſive diſtempers: Yea, it may obtain here ſome place, what is wont commonly to be noted for a cauſe, of the hyſterical paſſions, in maids and widdows, to wit, the untimely reſtraint of the ſeminall humour, which ought to be beſtowed about the pleaſure of *Venus*; at leaſt, if they receive help from the ſtate of a conjugal Life, it therefore happens, becauſe the reſtagnations of the nervous humour, which often fix a taint to the brain and nervous ſtock, by this means are prevented: Moreover, the nervous juice flows back towards its begin-

2. Or by reaſon of an obſtruction of the Nervous juice.

ning, because its passage is somewhere shut up, by a swelling or cancrous Tumour. Lastly in this City, a notable instance of this kinde of distemper hapned, *viz.* A certain maid of 12. years of age, had contracted an *hernia* or burstness, hence by the order of her Mother, she wore a truss ill fitted, for a fortnight, not without great pain and torment, a little hard knot much pressing upon the *glandulas* of the Groin: within this space (when before she was perfectly well) she began to complain of a giddiness and heavy dulness of her head; and so a little after, she felt convulsive, and as it were hysterical distempers, frequently falling upon her; together with it great swellings arose behinde her ears, and in her neck of the same side, to which she was never before obnoxious in all her life. It is not to be doubted in this case, but that from those *Glandulas*, which are the Emunctuaries, or sinks of the nervous Liquor, being too much pressed together, the superfluities of that humour, wont to be sent away from thence, by the Lymphatic vessells, restagnating in the head, brought forth those evills: because the arising of the aforesaid symptoms, so suddenly and manifestly followed, upon the wearing of that Truss upon the Groin, that even her Mother laid the cause of the Disease, upon that occasion. Besides also I have observed in others, the recrements of the nervous humour, being somewhere stopp'd in their Course, restagnating towards the head, have not only brought in convulsive symptoms, but from thence the *Kings Evill*.

Objections against the aforesaid hypothesis answered.

So much for the formal Reason, of the different original of the distemper, called hysterical; as also of the *genuine* Causes, of its symptoms: Out of which, it seems to appear plainly, that those passions, do not depend always on the womb, but much more often, on the fault of the brain, and of other parts of the nervous stock: But many things are objected against these, which according to the old opinion, cast all the blame on the womb: To wit, it seems so to be done because the assault of this disease invades almost only women; yea and women that are not well about their womb, *viz.* Child-bearing women, or such who have their courses stopt, are chiefly obnoxious to it: Besides it may be argued from things helpfull for it, because a plaister worn upon the lower part of the belly, also a strict girding of the belly, and *hypochondria*, by which the ascent of the womb may be hindred, do not seldom drive away the fit, just falling on them; this also shews it, that sweet things held to the nose brings on the fit, and stinking things drive the same away, it is said to happen quite contrary, if the same things be laid to the belly, or privy member.

That we may wipe off these objections, we say first, that the symptoms, which seem hysterical, do not only happen to women: for we have shown already, by the history brought by us, that a certain man has been obnoxious to those kinde of fits, with the ascention of a bulk in the bottom of the belly: but that women are much more often troubled with those convulsive diseases than men, two reasons may be shown, *viz.* First, for that their animal constitution is much weaker: to wit, they have the brain and nerves softer, and of a less firm texture, that they are not able to suffer any thing strongly, or to resist every injury; also the animal spirits in them, being more prone to slight and distraction, more easily admit an heterogeneous and explosive *Copula*: from hence Women, from any sudden terror or great sadness, fall into mighty disorder of spirits, when men from the same occasion, are scarcely disturb'd at all. Secondly, women more readily receive the convulsive disposition, because they gather a more plentifull heap of the morbific matter: for that, whilst they lead for the most part a sedentary Life, the blood, for want of ventilation, becomes more impure; besides in this sex it originally abounds with heterogeneous and fermentative particles; wherefore it is convenient for it, to be more often purged, by the flux of their Courses; by which notwithstanding, not always what is extraneous, and incongruous, is wholly cast forth, from the bloody Mass, but that there remains, that which being poured on the brain, and its appendix, as occasion is given, becomes the cause of the convulsive distemper: Moreover, when the menstrual flux, being stop'd, a convulsive disposition is occasioned, it is not therefore to be thought, that such a distemper is rais'd up from the womb, but that the bloody mass, being more than usually imbued, with heterogeneous particles, carries them, together with the nervous juice, to the head: yea, chiefly for this reason also, child-bearing women, are found obnoxious to the

passions,

paſſions, as it were hyſterical, for beſides that the membranes of the womb being hurt, a convulſion there begun, by reaſon of the felt trouble, creeps upwards and is at laſt communicated to the head; it moſt often happens, that the blood being infected, by the termes being retained, grows hot with a feavouriſh burning, and then inſtead of a *criſis*, the malignant infection, is carried to the brain, from whence convulſive, and not ſeldom ſoporiferous, or ſleepy diſtempers, are excited.

But that it is argued, that this diſeaſe ſeems to be hyſterical, becauſe Remedies applyed about the *abdomen*, often bring help; it will be eaſy to ſhew, that the morbific cauſe planted in the meſentery, oftner than in the womb, is ſometimes either taken away by that means, or reſtrained from its Influence: beſides, the ſame kinde of applications, about the *hypogaſtrium*, are no leſs profitable, altho the original of the diſtemper, be derived from the head it ſelf: for we have ſhewn before, that when the heterogeneous, and exploſive matter, deſcending from the head, brings a convulſive diſpoſition, to the ſpirits diſpoſed within the whole proceſſes of the interior nerves; the convulſive motions therefore excited, begin from the extremities of the nerves, and ſo creep upwards towards their beginnings; ſo that firſt of all the *viſcera* of the lower belly, then the *præcordia*, and laſtly the brain it ſelf are affected; but if the outmoſt ſpirits, *viz.* thoſe dwelling in the enfoldings of the meſentery, be reſtrained from entring into exploſions, all the reſt, in the remaining nervous paſſage, continue in their orders: and this, plaiſters worn upon the navel, do often effect: for they repreſs, and compel into order, with their odour, the ſpirits from leaping forth; yea alſo, not ſeldom, they ſhake off and drive away, the *Copula* cleaving to them: wherefore, when the exploſions there about to be made, are reſtrained, the convulſive fit is wholly prevented: which yet is more apparent, for that, if the Convulſion begun in the lower belly, and from thence aſcending like a Globe, be preſently ſuppreſſed, and by a ſtrong binding together of thoſe parts, it be hindred that it creep not upwards, oftentimes the convulſive paſſion is broken off, the *præcordia*, and the brain being untouch'd: wherefore it is a common cuſtome, for ſick women, to binde ſtrictly the *Epigaſtrium*, with ſwaths or rolers, and ſo to ſtop the progreſs of the ſymptoms, towards the upper parts: For when the animal ſpirits, enter into Convulſions ſucceſſively, as it were a fiery enkindling, whereever the tinder, or cheriſhing matter is cut off, or intercepted, the diſtemper is there reſtrained.

As to the various effects of odors, to wit, that ſweet things bring on the fit, but ſtinking things drive the ſame away, it may be ſaid, that the former do looſen the animal ſpirits, by pleaſing them, and too much releaſe them from their wonted tasks of Influence, and ſo provoke them ready to be exploded, in ſuch diſorders, yea and as a flame put to them, do ſomewhat inkindle them: but on the contrary, ſtinking things repreſs the ſpirits, drive them back from excurſions, and exorbitances, and compell them into order, yea like ſulphur, mixt with *aurum fulminans*, take away from them their exploſive force.

What we have hitherto ſaid, of the paſſions called from the womb hyſterical, will yet more clearly appear, if for the Confirmation of our *Hypotheſis*, we ſhall add arguments taken from anatomical obſervations; I will therefore lay before you a notable Caſe, by which the former reaſon, and Cauſes of the convulſive diſtempers, may be very much illuſtrated.

Obſervation. A very noble Lady of a moſt curious ſhape, and highly indued with a virtuous diſpoſition, of minde and manners, of late lived near to this place, who being for many years obnoxious to convulſive diſtempers, for that ſhe had originally, or hereditarily contracted this ſickly diſpoſition, aud had experienc'd the fruits of this morbid ſeed, almoſt every luſtre of her age, but chiefly as often as ſhe was with child, (for ſhe very frequently miſcarried) was wont to be tormented above meaſure, with convulſive paſſions, as it were hyſterical; becauſe, preſently after the reſtraint of her monthly flowers, the heterogeneous particles being tranſlated to the brain and nervous ſtock, cauſed fits of this moſt cruell diſtemper.

After ſhe had newly conceived, in the firſt months, according to her old cuſtom, ſhe was preſently moleſted with convulſive diſtempers; about the nineth week of her big belly, from taking cold, ſhe fell into a dangerous feavour, in which very

acute pains tormenting her, in her loyns and bottom of her belly, for many days, ſeem'd to threaten an abortion: but theſe pains, as the event ſhew'd, rather to be termed Colical, proceeded from a ſharp humour, falling down into thoſe parts, from the brain, by the pipes of the nerves; for towards the declining of the feavour, this matter being ſomewhere elſe tranſlated, a great looſneſs or Diarrhæa, pains of the feet, and as it were an ulcerous diſpoſition ſucceeded.

As ſoon as this Lady became well from her feavour, and thoſe pains, the convulſive diſtempers returned, for every morning, waking from ſleep, ſhe was wont to ſuffer Convulſions, and cruel contractions, about the parts of her face and mouth, as alſo in her armes and thighs; which ſymptoms, without doubt, did ariſe from a ſerous heap or gathering, laid up in the head, about the beginnings of the nerves; and by them imbibed, together with the nervous juice, more deeply in ſleep; and when afterwards the ſame matter, was carried by the pipe of the interior nerves, into the foldings of the Meſentery, aud loyns, moſt cruel pains of thoſe parts, and alſo fits as it were hyſterical, did moſt grievouſly infect her.

But theſe convulſive motions of her face and members, after a little time ceaſed, but yet ſhe ſtill remained weak, and without ſtrength, with a pale countenance, an infirm and trembling gate, and deſirous only of congruous food, and hot Liquors: about the end of the third month, at which time ſhe was wont continually to miſcarry, her *menſtrua* broke forth, which coming away for two or three days together, with little pieces of broken membranes, ſhe expected to miſcarry: But that flux ceaſing, pains as it were of one in labour, in her *abdomen* and loyns, as before aroſe, and for the ſpace of a week, tormented her day and night; at length, having uſed a bath of *Emollient* herbs, and afterwards put to bed to ſweat, ſhe brought forth the burthen of her womb: the conception ſo coming away with mighty pain, was about the bigneſs, and like the figure of a Turkie egg: the exterior coat of it was torn and broken, the interior remaining whole, contained about half a pint of clear water and nothing elſe beſides; there appeared no ſhape of a childe, or any rudiments that it would ever be one: Afterwards for 4. or 5. days, her flowers flowed forth, with ſome pieces of broken membrances: in the mean time, pains with their wonted fierceneſs tormented her, and when the ſpace of a week being elapſed, they left not off of themſelves, remedies at length were ſought to allay them.

To this end, firſt Liniments, Fomentations, Baths, and Clyſters, were often adminiſtred; alſo medicines purging the filth of the womb, on which the cauſe of all the evill was caſt, were taken inwardly: Short intermiſſions of her tortures, followed upon the uſe of the former; but then the diſtemper returned, with great trouble; yea the diſeaſe much increaſing, in three weeks time, got many other horrid ſymptoms: for beſides the pains in her belly and loyns, which became more cruel every day, alſo ſhe was ſhortly after tormented in her back, neck, ſhoulders, as alſo in her arms and thighs, with moſt cruell pain; and that more bitterly, as ſoon as ſhe was warm in her bed; beſides, ſhe was afflicted with a frequent giddineſs, vomiting, and nauſeouſneſs, and often in a day, with moſt grievous convulſive fits, *viz.* Firſt a bulk was ſeen to aſcend in the bottom of her belly, and preſently it lifted up her whole belly forceably, by and by reſpiration being reſtrained, an Inſenſibility, with a dead countenance ſucceeded: after that, ſhe had thus lain as one dead, for three or four minuts of an hour, ſhe was wont ſuddenly to leap up, that ſhe could hardly be held down, or kept by thoſe ſtanding by; then follow'd cruell contractions, and diſtortions in all the parts of the mouth, and face, as alſo in all the members of the body: Theſe ſymptoms were indeed judg'd to be hyſterical, becauſe this noble Lady ſo lately had miſcarried.

But weighing every one of theſe, I was at laſt of this opinion, that the cauſe of either fit, *viz.* Both the *dolorifick*, and the convulſive, did depend wholly on the evill affection of the brain, and nervous ſtock, and that without any fault of the womb; for that a ſharp humour, being heaped up within the head, did from thence deſcend thorow the paſſages of the Nerves, into parts at a great diſtance; which lodging upon the membranes and *fibres*, and fermenting with the humour, flowing in from the bloody maſs, did irritate them very much, and ſo ſtir'd up moſt cruel pains: Then afterwards, when the heterogeneous and exploſive particles,

ticles, being admitted with what humour within the head, and entring into the nervous paſſages, did cleave to the ſpirits; therefore the convulſive diſpoſition, then breaking forth into grievous fits, was induced, as ſhall be by and by more largely laid open.

Inſtituting Curatory Intentions, according to this kinde of *Ætiology*, I order'd to have blood taken from this ſick Lady, at what time ſhe moſt grievouſly laboured, out of the *Saphena vein*, and within two days, to be given her a gentle Cathartick, and that to be reiterated, once or twice in a week: Alſo on other days, Morning and Evening, I gave her ſpirits of *Harts-horn*, and at other hours, twice or thrice in a day, of the *powder of Pearls* and *Crabs-eyes*, with a doſe of the following Julap. Take of the *water of Snails*, and of *worms magiſterial* each ℥iii. of *Saxifrage*, and *black cherries* each ℥ iiii. of *hyſterical water* ℥ ii. of the *ſyrrop of Corralls* ℥ i ß. of the *tincture of Coſtor* ℥i. mingle them: The bath of ſweet herbs was frequently uſed, when neceſſity urged, ſhe took *Opiats* always with good ſucceſs: *Veſicatories* were applyed to the inward part of either thigh, alſo to the hinder part of her neck; alſo *Fomentations*, *Oyntments*, *Clyſters*, *Cuping-glaſſes*, *Sneezing-powders*, with many other manner of adminiſtrations were preſcribed, according to the exigences of the ſymptoms.

By this method obſerved for about 14. days, the noble Lady having received very much eaſe, was wholly rid of her convulſive fits. Yea, the torments of her Bowells and members, and the other ſymptoms being very much leſſen'd, ſhe hoped quickly to recover her health: But after this, partly by reaſon of an ill order of dyet, which the ſick Lady always indulg'd her ſelf in, or taking little, but chiefly, by reaſon of a ſudden paſſion of fear and ſadneſs, which an unluckie accident hapning within her own houſe, had cauſed, ſhe fell into a relaps, by and by the diſeaſe growing into a much worſe Condition, for both the Convulſions, and pains, did infeſt her more bitterly; yea and her ſtomach being almoſt tyred out, with continual vomiting, would not admit either of food or medicines. She took Aſſes milk for ſome days, with ſome ſucceſs; which notwithſtanding, for as much as breeding Choller in her ſtomach, ſhe found it troubleſome, ſhe ſhortly omitted: at length in ſpite of all Remedies, preſcribed carefully by the Conſultation of many Phyſitians, my noble patient from day to day grew worſe, and by degrees death approached: Two days before her death, the torments of her belly and loyns very much abated, and ſhe became more than uſually chearfull, and conceived ſome hope of Recovery; But in the mean time ſhe complained of a pain and great heavyneſs in her head; and about the beginning of the night ſhe ſlept ſoundly, but being awakened ſhe fell into a very horrid convulſive fit, which preſently paſs'd into a quick deadly *Apoplexie*, for being made inſenſible, and ſpeechleſs, ſhe left this life within twelve hours.

The rational account of the diſeaſe taken from anatomical Obſervations.

When various judgments had paſſed, about the cauſe of the ſickneſs, of which this illuſtrious Lady dyed, moſt flinging all the evills on the diſtemper of the womb, others on an Ulcer or Impoſthum, which they ſuſpected lay hid, ſomewhere about the *viſcera* of the *abdomen*; it pleaſed her friends, that her dead Carcaſe, kept long opened for the Funeral, ſhould be dilligently inſpected, and ſo the genuine Cauſes of the diſeaſe, and her death, might be inveſtigated; which task being left to my care, I executed with all the dilligence I was able.

Therefore in the firſt place, it was worth obſervation, about the habit of the body, that the members and lower parts, nigh and beyond the ſeats of the pains, were very much waſted; as her thighs, quite worn away, appeared like a Skelliton: In the mean time, her face, neck, and arms, remained full, and plump enough: from whence it appears, that the nervous Liquor, does help no leſs to the buſineſs of nouriſhment, than to the exerciſe of the animal faculty: wherefore, when that Liquor, being much hindred in its paſſage, the loyns and belly, taken up with the continual Convulſions, did not deſcend, with a due influx, to the inferior parts, they for that reaſon, became preſently both without ſtrength, and lean, and waſted. This kinde of Atrophie, differs in this, from other hectical waſting, which happens from the vice of the blood, becauſe in this latter, an hippocratick or waniſh face, is the chief ſigne of the Diſeaſe, in that firſt mention'd, the countenance, and aſpect, ſhow little or nothing of evill.

The dead body of this noble Lady, tho very lean, and that her bowells were all

all the emptied, yet quickly putrified, for within 40. hours all the skin was discolour'd, and appeared in this part livid, in that green, and in others blackish; and her Corps so suddenly putryfying, yielded a most horrid smell, the reason of which without doubt was, that by reason the muscles were exercised with perpetuall Convulsions, the principles of their mixture, were so much loosned, that they being in a readiness for dissolution, quickly after death, fell asunder one from another, after the like manner, as we may observe of the flesh of wilde beasts, which being tyred with a long course, or beaten to death with Clubs, for this much sooner putrifies, then the flesh of those, which are kill'd quickly, and peaceably.

Her belly being opened, the Intestines, and ventricle appeared whole enough, *viz.* Intire and well colour'd, but they were emptie, and as it were blown up, for as much as they were troubled, almost with perpetual evacuations, *viz.* Those placed above or below: in all this Cavity, no foot steps of an Ulcer, or Imposthum were perceived. Whilst we were searching the cause of the disease, and rolling the Inwards here and there, there was something met within the mesentery, worthy notice, to wit, about its middle, where it is fixed to the back, and contained the greater folds of the nerves, a substance somewhat loose, and inflated, as it were with many little bladders, equalling an hands breadth, was seen, after that manner, as when in a shoulder of Veal, the inter-space of the muscles, are blown up, by the Butchers, that those parts might swell up, and seem fuller, and fatter: In this place of the mesentery, because it was more tumid and softer, we thought some humour, the cause of the pain, to lodg there, but opening it, I found only the membranes to have been loosned one from another, and to conclude nothing but winde, within its inter-spaces: which seperation of the membranes, and devulsion one from another was without doubt induced, by the frequent Convulsions or explosions of the spirits, which within the enfoldings, and nervous *fibres*, there thickly planted, were almost continually provoked; and those Convulsions hapned, by reason of the heterogeneous, and explosive particles being derived thither, from the head, by the pipe of the Nerves.

But as to those torments of the belly, and as it were an ascent of a bulk or substance in the convulsive distempers, and the inflation of the *Abdomen*, it is not to be doubted, but that the seat of the morbific cause, did lye hid in that part of the mesentery: but because so much suspition was had of the womb, being chiefly affected, we did next inquire how much this Inward deserv'd it: Therefore having dilligently searched the tunnell, placed within the *Os pubis*, I found the womb in its due place, and as to all parts sound, and well furnished: its body was drawn to its just proportion, altho it was but 5. weeks since she had miscarried, *viz.* It was like a small pear in figure and magnitude; the *Glandulæ* on either side of the bottom of it, which are called the testicles, appeared very small and flaggy, without any superfluous or virulent humour contained in them: the body of the womb, whereever it was dissected, equal'd a thumbs breadth in thickness, its inward Cavity was no bigger than what would hold a bean: within this hollowness, as use to be in the Caverns of other Inwards, was included a mucous or dreggy matter, in a very small quantity: but in truth, about the womb, or its *appendix*, there was nothing, to which might be imputed as a morbific cause, of the symptoms but now described: from whence therefore it may be demonstratively concluded, as I at first thonght, that the passions termed from the womb hysterical, are most often excited, from some other cause, than the fault of the womb.

The Intestines being removed, we found also the reins sound enough, but one of them was of an unusual figure, *viz.* It was cleft into many lobes, like the Kidney of a Calf.

The *Milt*, *Pancreas*, and *Caul* without fault: the *ventricle* was much blown up, and its inward Coat was plain without folds, or wrincles, which certainly hapned, by reason of its frequent Vomiting, this Inward being almost continually troubled with Convulsions: Besides, for this reason, the tone of the stomach being broken, it did neither rightly desire, or concoct the food, or aliment.

The *Liver* very much differ'd from a sound constitution, for it was tumid, and somewhat hard, of a pail colour, like rotten wood, wholly dry and without blood,

blood, and this without doubt, the frequent use of Cordiall, and highly hot liquors had effected.

The *Lungs* were of a blewish colour, and every where obstructed, and stuff'd with a stinking and frothy matter: Certainly this Inward and the Liver had been vitiated of a long time, wherefore as the blood being degenerate, and very much depraved of a long time, from its right temper, had yielded the first seeds of this sickness, so also it afforded a constant cherishment of it.

But indeed, we sought, and that not in vain, for the chief and as it were originall cause of the disease, in the head; therefore the skull being taken off, the vessells of the *Meninga*, and those creeping about the brain, appeared full, and distended with blood, when in the rest of the body, scarce any blood had flowed forth, in the cutting of it: the thicker *meninge* being removed, thorow the other thin and pellucid one, was discerned a clear water, filling the enfoldings and crevices of the brain, and as it were overflowing its whole substance: In truth the serous heap of waters, had filled full all the Cavities, and inward places of the brain: the enfoldings of the *choroides*, or net-like membranes of the brain, being a long while immersed in water, and as it were boyled, were become discolour'd and half rotten: nigh to the beginning of the Splanchnick nerves, or belonging to the Spleen, the water insinuating it self very much, had separated the *pia mater* from the trunk of the oblong marrow or pith, for two fingers breadth: without doubt, the morbific matter descending from the head, by the passage of these nerves, into the enfolding of the mesentery, was the cause of the pains and Convulsions: Further, the same matter also, afflicting the heads of other nerves, and passing thorow their pipes, produced afterwards, these most cruel distempers in other parts, to wit, almost every where, of the whole body.

As to the Cure, or means of healing, used in the passions commonly called Hysterical: forasmuch as the symptoms of this disease are very much convulsive, therefore it is fit, that anti-spasmodic or anti-convulsive Remedies, such as were before described, should be chiefly indicated; but when these distempers most often happen to the female sex, in whom for the most part, the menstrual flux, and other accidents of the womb do challenge a part in the morbific cause; therefore medicines respecting the various dispositions of the womb, are to be added to the former, and many ways to be compounded with them. The Therapeutic or Curatory Indications, are either Curatory, to be administer'd in the fit; or preservatory which are instituted out of the fit, that take away the cause of the disease, and prevent its comings or accessions. *The Method of Curing the hysterical distempers.*

1. As to the first, if the fit is wont to be light, and without other perturbation of the spirits, it may be permitted to pass away of it self; but if it being more heavily troublesome, there will be need to bring some help to nature much oppressed, this only thing is to be done, that the spirits being freed from the Embraces of an heterogeneous *Copula*, they may remit their inordinations and explosions: for this purpose, it is grown into use, to put to the nose stinking, and ill smelling things, the scents of which compell, and repress the too fierce spirits, ready to leap forth, into their orders, and also shake off from them, the heterogeneous *Copula*, and often drive it quite away: *Asafœtida*, *Castor*, *Galbanum*, being put into fine Linnen and applyed to the nostrills are convenient; also burning of *Partridg feathers*, *old skins*, and *sulphur*. Besides the spirits and *oyl of Sut*, or of *Harts-horn* do not seldome help: yet I have known these kinde of fumigations, being very troublesome to some women, to increase the fit; it is probable that the same sometimes may too much irritate the spirits, and drive them into greater disorders; and as stinking things put to the nose, so the like poured into the mouth, do often bring help: wherefore we give often with good success, to hysterical people, *Tinctures of Castor*, *Solutions of Assafœtida*, and *Galbanum*, *spirits of Harts-horn*, and *Sal*, with proper waters. Take of the *spirits of Harts-horn*, from 12. to 15. and 20. drops, let them be taken in a little draught of the following Julap. Take of the *waters* of *penny Royall*, and *mugwort*, each ℥ iii. of the *water* of *Briony* compound ℥ ii. of *Castor* tyed in a knot and hung in the glass ʒ ß. of the whitest sugar ℥ i. mix them. Take of the *Tincture* of *Castor* ℈ i. to ʒ ß: let it be taken ia a little draught of small beer. Take of *Assafœtida*, and *Galbanum* ʒ ii. let it be dissolved in *spirit of wine* to the extraction of a red tincture. *Curatory.*

The

The dose ℈ i. in two or three spoonfulls of *featherfew water*. *Riverius* very much crys up that of *Solenander*. Take of musk, and of *dragons-blood*, each ℈ i. take more or less of it in water of *Lillies of the Valley*, ℥ iii. or iiii. *John Anglicus* commends *parsnip-seeds*, or the *seeds* of *Penny-royal* in wine, or other proper Liquor, as a most certain Remedy. If the fit persisting a long time, should cause want of speech, or motion, the more sharp Clysters, as of *bryony-Roots*, and *Carminatives* boyled in water, are to be administred, and frictions of the thighs, and feet are to be order'd; and if they shall yet grow stronger, Cupping-glasses are to be applied to the belly and groin, yea also, let them be often provoked to sneezing: it is convenient to give some, in the middle of the fit, a draught of simple cold water, or in which *Champhir* had been dissolved.

Preservatory. 2. The preservatory Indication comprehends these three Intentions, *viz.* In the first place to take away, or to derive to some other place the impurities of the blood, apt to be poured forth on the brain, and nervous stock. Secondly, to fortifie the brain, and so to strengthen the indwelling spirits, that they may either not at all receive, or may easily shake off the heterogeneous *Copula*. Thirdly, to amend whatsoever is enormous in the womb, and contributes to the convulsive disposition.

1. The first Intention is performed by purging, and phlebotomy, and other common ways of purifying, and purging the blood and humours. If there be opportunity for an emetic, I judge it best allways to begin with it, especially in Cacochymicks, or bodies full of evill humors, in the longing disease, and Pica, and in such whose great load of viscous phlegm, stuffed within the folds and coats of the ventricle, hinders the virtues of other medicines: The next day after the Vomit, unless any thing bids the contrary, let blood be taken, in women of a hotter temper, presently from the Arm, and afterwards if need be, from the foot, or from the sedal veins with Leeches; but in bodies troubled with obstructions, and less hot, let blood be taken more sparingly, and more rarely, and only in places scituate below the womb: After these Evacuations (if they are to be ordered) rightly performed, once within six or seven days, a purge is to be prescribed according to the following forms. Take of *pill-fetida major*, ℥ i ß. of the *resine of Jalap* xii. grains of *Tartar Vitriolat*, and *Castor*, each ℈ i. of *ammoniac* dissolved in hysterical water, what will suffice to make xii. pills, for iii. doses. Or take of the *resine of Jalap* gr. xviii. of *Calomelaus* ℥ i. of *Castor* ℈ i. make a powder, let it be divided into iii. parts for iii. doses, let it be given in the pap of a *roasted apple*, or in *Conserves* of *Borage*: so those induced with a more hot temperament, a dose of extract, or our solutive syrrop may conveniently be administred: for the revulsion of the morbific matter from the head, Issues made in the calf of the leg, or thigh, and sometimes vesicatories, legatures, and painfull rubbings, are wont to be administred: But not only a purging of the blood, and a revulsion of its recrements from the head, but an alteration of its Liquor, and reduction of it to its due temperament have here a place: Wherefore in some hysterical people, steel Medicines help, in others the use of Spaw-waters, or whay, in others the baths are wont to be signally profitable.

The second Intention, to wit, the rectification of the brain, and animal spirits, is performed with Cephalic, and properly anti-convulsive medicines: which indeed ate to be diligently exhibited, almost every day, when they do not purge or bleed: since there are various *species* of such like Remedies, and several manners of administrations, we will here add some of the more choice forms.

Take of the Lees of *bryony*, *Assa fetida*, *Cystor*, each ℥ i. of the *Salt of Coral*, *Amber*, *Tin*, each ℥ ß. of *Galbanum* dissolved in hysterical water, what will suffice to make a Mass: dose, half a scruple, to ℈ i. morning and evening, drinking after it a dose of proper liquors.

Or, Take of the *seeds* of *Wilde-parsnips*, of *nettles* each ℥ ii. of *vitriol of Steel* ℥ i. of the extract of *Gentium*, *featherfew*, each ℥ i ß. with what will suffice of the *syrrop of Mugwort*, make a mass, let half a dram be taken after the same manner.

If the form of a powder pleases better; Take of the *Roots of Virginian snake-weed*, and *Contrayerva*, each ℥ i ß. of *Coral* prepared, of *Pearls*; of *white-Amber*, each ℥ i. mingle them, make a powder: Dose ℈ i. to half a dram, morniug and evening, with an appropriat Liquor.

Opiats are Composed after this manner. Take of the *Conserves* of the *flowers*

of

of the Lilly Convallis, of the *male-paony*, of *betony*, each ℥ ii. of the *ſeeds* of *Paony*, of *red Coral* prepared, each ʒ ii. of the powder of *Cretic Dittany* ʒ i ß. of the *ſalt of wormwood* ʒ ii. with what will ſuffice of the *ſyrrop of the rinds of Citrons*, make an Electuary. The doſe morning and evening the quantity of a nutmeg. After the ſame manner may be given to poor people *Conſerves* of the *Tree of Life*, or of the *leaves of Rue* twice in a day.

The Liquors appropriat againſt the hyſterical affections, and to be drunk after the aforeſaid Medicines, are, either diſtilled waters, which are to be taken by themſelves, or with other things, in form of a Julap, or decoctions, or tinctures and Infuſions.

Take of the *water of Mugwort*, and of *penny Royal*, each half a pint, of *hyſterical water* ℥iiii. of the *Tincture of Caſtor* ℥ß, of the *Syrrop of Coralls*, ℥i ß, mix them. The doſe from ℥i to ℥i ß, with any of the medicines afore deſcribed.

Take of the *leaves of Penneroyall*, of *Fetherfew*, of either *Southernwood*, of *Calaminth*, of *Nep*, and of either *Horehound*, each i handfull; of the *Roots of Bryonie* ℥iiii, of the *ſeeds of Parſnips* ℥ii, cut and bruſed, put them into white-wine or Cider, ſix pints, and ſo diſtill them, according to art.

Take of the *Root* of the *male Peony*, *Angelica*, *Valerian*, each ℥ ß, of the *leaves of mugwort*, *ground Pine*, *Calaminth*, *Peneroyal*, and *Miſſletow of the Oak*, each i handfull, of the Seeds of either *wilde Parſneps*, each ʒiii, of *Raiſins* i. handfull; let them be boyled in 4 pints of *Spring-water*, to the half: add to it of *white-wine*, *lib* i ß, ſtrain it, and keep it in cloſe veſſells; The doſe ℥iii, or 4 twice in a day.

Take of the *wild-Parſnep Seeds* bruſed ℥ ii, of *Caſtor* ℥ i, let them be put into a Glaſs, with i quart of *white wine*. The doſe ℥ ii twice in a day.

3. As to the third Intention, which inhibiting the diſorders of the womb, doth promote the cure of the paſſion called hyſterical; I ſay, firſt of all what in times paſt was believed, concerning the Cauſe and ſcope of curing the diſeaſe, that the womb did aſcend, therefore that it ought to be reduced into its right place; is altogether fictitious, as we have elſewhere ſhown: The falling down of the womb, or its coming forth, oftentimes happens; but rarely, or never produces the hyſterical Diſtempers: Beſides, the diſlocation of the womb in childbearing Women, ſometimes happens, preſently after their bringing forth, to wit, when the body of the womb being made Capacious, and newly emptied, doth not ſink down or fall within the Tunnel, in its right place, but upwards inclines now to the right ſide, now to the left, and there being drawn together like a purſe, is folded into a great bulk, which kinde of bulk, remaining long, nigh the ſide of the groin, is wont to give a ſuſpition of another child, or the ſecondine or afterbirth to be left behinde, or alſo of ſome hard ſwelling tumor there increaſing; but afterwards, when the *menſtruum* coming plentifully away, the womb is reduced to its due magnitnde, that tumor by degrees vaniſhes: but while it there remaineth unleſs for that reaſon, the *Lochia* or *menſtrua* were ſtopp'd, it doth not produce the hyſterical paſſions. For the reducing of this part the ſooner into its due poſition, fomentations, Liniments, and Plaiſters, are convenient. But moſt times that Symptom, paſſes over, of it ſelf, without any further harm. To what other diſtempers the womb is obnoxious, in child-bearing, and by what method to be helped, we have fully ſhown in another place. As to the other vices of that part, which happen to ſome women, not bearing children, we declare, that they chiefly are either a diſeaſe of the womb, made by the breaking of the unity, *viz*, which is either ſome ulcer, or Tumor; or an inhibition of ſome wonted excretion, or putting forth, to wit, a ſuppreſſion either of the menſtruous blood, or the whites, or the ſeminal humour: Moreover becauſe of the *menſtrua* being retained, the heterogeneous particles being often poured forth into the head, bring in the Convulſive paſſions: in like manner, when the whites are ſtopped, the excrementitious matter, being ſupped up by the blood, is deliver'd to the brain and nervous ſtock: yea, when an uſual evacuation of the ſeed is hindred, the ſuperfluities of the nervous humour, flow back upon the brain, and infect its indwelling Spirits, with an exploſive and morbific tincture: There is no need here, to diſcourſe more largely or particularly, of thoſe Peculiar diſtempers of the womb, but to compound medicines, and intricate adminiſtrations, proper for womens diſeaſes, with anticonvulſive Remedies.

CHAPTER. XI.

Of the Distempers commonly called Hypochondriack, *which is shown to be, for the most part Convulsive: briefly also of* Chalybeats *or* Steel-Medicines.

IN the foregoing Chapters, we have clearly shown, that the Passions called hysterical, do not allways proceed from the womb, yea, more often from the head being distemper'd; next we shall inquire concerning the hypochondriacal Distempers, of what original and nature they are, and upon the fault of what parts they chiefly depend. The vulgar opinion is, that the symptoms wont to accompany this disease, are wholly produced from the spleen; wherefore, they are ascribed very much to vapours, arising from this inward, and variously running up and down, here and there; when in truth, these sicknesses for the most part are convulsions, and contractions, of the nervous parts: but that it might appear, by what causes they are wont to be excited, we ought to consider first, the Symptoms themselves, and to place them into some order or rank.

A description of the hypochondriacal Affections.

As to the Distempers therefore, which are vulgarly termed *hypochondriac*, it is observable, that they happen chiefly to men of a melancholly temperament, with a dark aspect, and more lean habit of body: it is rarely, that this disease troubles fair people, with a fresh Countenance, or also those indued with a too Phlegmatic complection: It betrays it self in manifest signes, about the hight or midest of their Age; men are found to be more frequently obnoxious to this, than women, being made habitual in either, it is very hardly, or not at all to be cured, in women, by reason of their weaker Constitution, it is accompanied, with a great many more Convulsive Distempers, wherefore, Commonly it is said in this Sex, the hysterical, to be joyned with the *hypochondriacal* Passion.

The Symptoms which are imputed to this Disease, are commonly very manifold, and are of a divers nature, neither do they observe in all, the like beginning, or the same mutual dependency, among themselves: for they seem in these, most to affect the Inwards of the lower belly, in those the *Præcordia*, in others the Confines of the Brain: and in most, though not in all, the ventricle labours much; concerning the appetite it is often too much, but presently burthened with what it hath taken in; and when the food, staying longer in it, by reason of slowness of Concoction, their Saline particles being carried forth into a flux, pervert the whole mass of the Chyle, into a pulse or pottage, now Sour, or austere, now salt or sharp: from hence pains of the heart, great breakings forth of blasts, rumbling of winde, and often vomiting succeed; and because of a pneumatick defect, or of Spirits, the Chyme or juice, is not wholly made volatile, and carried forth of doors, but that the ballast of the Viscous or Slimy matter, sticking to the coats of the ventricle, is left behinde; an almost continual Spitting infests them; a distention in the *hypochondrium*, and often there, and under the ventricle, a cruell pulsation is felt: also there pains ordinarily arise, which rnn about here and there, and for many hours miserably torment with a certain lancing: In the mean time, from the Contractures of the Membranes, and from the fluctuation of winds, stirred up by that means, rumbling and murmurs are produced: Also in the *Thorax*, oftentimes there is a great constriction and straitness, that the respiration becomes difficult and troublesome, upon any motion: also, most grievous asthmatical fits fall upon some: moreover, the sick are wont to complain of a trembling, and palpitation of the heart, with a noted oppression of the same: also a sinking down or melting away of the Spirits, and frequent fear of a trance, comes upon them, that the sick think Death is always seising them: In this Region, about the membranes, and chiefly the *mediastinum*, or that divides the middle of the belly, an accute pain, which is now Circumscrib'd to one part, now extended to the shoulders, is a familiar Symptom of this Disease. But indeed in the head, an Iliad of evills doth for the most part disturb hypochondriacal people, to wit, most cruell pains returning at set times, do arise, also

the

the ſwimming of the head, and frequent *Vertigoes*, long watchings, a Sea, and moſt troubleſome fluctuation of thoughts, an uncertainty of minde, a diſturbed fancy, a fear and ſuſpition of every thing, an imaginary poſſeſſion of diſeaſes, from which they are free; alſo very many other diſtractions of Spirits, yea ſometimes Melancholly, and madneſs accompany this ſickneſs: beſides theſe interior Regions of the Body beſeiged by this Diſeaſe, wandring pains, alſo Convulſions, and numbneſs, with a ſenſe of pricking, invade almoſt all the outward parts; nightly Sweats, flushings of the Blood in the face, and the palms of the hands, eratick feavours, and many other Symptoms, of an uncertain original, do every where ariſe; concerning which, foraſmuch as the genuine Cauſes, and the manner of their coming to paſs, could not be readily determined, preſently all the fault is caſt upon the Spleen, and Phyſitians accuſe that, as if it were the chief author of every irregular Diſtemper; but by what right or authority, by and by ſhall be ſought into: In the mean time, it is to be obſerved, that the chief Symptoms of this ſickneſs, are Convulſive, and depend immediately upon the irregularities of the animal Spirits, and the nervous juice, rather than on the evill diſpoſition of the *Viſcera*, ſerving for Concoction. But indeed, from whence the firſt riſe of this moſt complicated Diſeaſe proceeds, and by what means it brings forth the divers manners of diſtempers, in ſo many places, will not be ſo eaſie to determine.

The hypochondriacal diſtempers belong to the nervous kinde.

It would be a tedious thing, to ſhew here, what the ancient and modern Phyſitians thought of the *hypochondriack* Paſſion, and of its eſſence, and Cauſes; we will only take notice, that moſt of them do aſcribe this ſickly Diſpoſition, to the only fault of the Spleen; In the mean time ſome contend that the whole confines of this Inward, partaking of part of the fault, the blood flowing every where in the Splenetick, and Epigaſtric Veſſells (or thoſe belonging to the Spleen and belly) for that it being guilty of an hot and dry intemperature, and ſo obnoxious to too much fermentation, brings forth the original, or gives a beginning to this manifold evill: But the famous *Highmore*, affording relief, as well to the Spleen, as the Womb, hath caſt the chief Cauſe of this Diſeaſe, wholly on the vitious Conſtitution of the ventricle; and from thence, he would have the reaſons of the aforeſaid Symptoms, to be originally ſought, But indeed, that he might frame a fit *hypotheſis*, for the ſolving the *Phenomena* of this ſickneſs, he firſt ſuppoſes, the tone of the ſtomach to become too looſe, and weak, that for that reaſon, it hardly, and very imperfectly Concocts the aliments: ſo that the thin, and more Spirituous part of the Chyle, being ſent from thence, ſooner than it ought, to the blood, perverts its diſpoſition, to a hot and ſour temper; then the reſidue of the food, by a longer ſtay, within the Ventricle, degenerates into a ponderous, and viſcous or clammy Phlegme; which alſo, by its Stagnation (even as it is obſervable in things to be eaten, being longer kept) becomes very ſour, or ſharp: But from hence, that learned Man argues, that from the blood made too ſerous and thin, its effervescencies quickly paſſing thorow it, are induced: and from the ſtomach, loaded with ballaſt of ropy or viſcous matter, the winde and diſtentions of the Ventricle, and *hypochondria*, as alſo the belching, and troubleſome Spitting, do ariſe: whereby indeed, he wholly exempts the Spleen, from this fault, he contends, that it doth neither draw to it ſelf the melancholly dregs of the blood, nor ſerves for any office whatſoever, about the Sanguification or the making of blood; but that its uſe almoſt only conſiſts in this, that this Inward ſwelling up, or growing turgid with very hot blood, it adminiſters heat to the adjacent Ventricle, and cheriſhes it with gentle warmth.

The cauſes of the hypochondriac paſſion is inquired into.

Altho I may ſo far aſſent to this famous Author, concerning this opinion, that I yield, the ventricle doth often grievouſly labour in this Diſtemper, foraſmuch as the tone of which, being made lax, and its ſtrength broken, by reaſon of the indigeſtion of the aliment, a load of viſcous Phlegm, or Petuitous matter, is begotten even in its boſom, to which, by reaſon of the Saline particles, being brought into a flux, by their long ſtay, oftentimes a notable ſoarneſs, and auſtereneſs happen; then becauſe the fault in the firſt Concoction is not mended, the dyſcraſies and diſorders of the blood, receive that want of digeſtion in the ſecond: But yet he cannot draw me into that opinion, that the ventricle is always chiefly in the fault, or that the other Symptoms, of the hypochondriacal

The Hypotheſis of Dr. Highmore ſifted.

pochondriacal Disease, depend only on its vitious Constitution: For I have known many, cruelly afflicted with this sickness, who have been well enough in their stomach: although they have very much complained of the pulsation in the left hypochondrium, of the straitness of the breast, and a wandring pain excited in it, also of the trembling, and oppression of the heart, with a continual fear, and disturbed Imagination; in the mean time, they were wont to desire food greatly, and to digest whatsoever was eaten, without any trouble of the ventricle, or heaviness, and also without any spitting or acid belching: yea, I have observed others, great drinkers, and using an evill manner of living, to have contracted a loosness of the stomach, with an ill digestion, windiness, and frequent vomiting, who sound enough about their *præcordia*, and animal faculties, were not at all accounted for *hypochondriacs*: Besides, in this Distemper, the ventricle is often rather sick from the vitiousness of other parts, or of the Blood, than from its own default; because, it is usual for those sort of sick people, to be well in their stomach, so long as they may lye abed, and breath it forth; but when they are raised up, the pores being shut up, and the dregginess of the bloudy mass stagnating within, presently to be afflicted with the pain of the heart, an aggestion of winde, and frequent endeavours to vomit.

For these, and other Considerable Reasons, I judge the original of the *hypochondriacal* Disease, to be derived from some other fountain, than the weakness of the Ventricle: but forasmuch, as among the parts here primarily suspected, to be affected, great complaints are made against the Spleen; it will be worth our while, to enquire, what office this Inward doth discharge, then, as often as it fails in it, whether it contributes to this Disease.

The use of the Spleen is inquired into.

Tho I may grant with Doctor *Highmore*, that the Spleen doth cherish the Ventricle with its warmth, and so perhaps in some measure help Concoction: yet I do not conclude, this part to be framed chiefly for that end, but for some more noble uses; because, there seems to be need, for the digesting of the food in the stomach, not so much of heat, as of an active ferment: For fishes being actually cold, devour their food whole, and without the help of heat, easily concoct the same, being resolved as it were by a certain *menstrum*: besides, it is observed of the spleen, that though in man, its whole substance lyes near to the ventricle, in most other creatures, who are indued with a longish form, as to the greatest part of it, it is removed far from the Ventricle: Further, if the Spleen be the only Chimny, in which the blood warming the Ventricle is contained, what is the reason, that it, rather than the Liver or Lungs, becomes of a livid or blewish colour, and is stuffed with a black blood, and that less hot?

See his discourse of fermentation. Chap. 5th.

When I consider these things, which sometime since I have observed; concerning the use of the Spleen; it seems far more probable, that a certain dreggy portion, *viz.* a matter, consisting of an earthly, and fixed salt, is layd up in this Inward, by the blood carried to it, by the arteries, which being exalted there as it were by digestion, and into the nature of a ferment, is lastly committed to the blood, flowing from it by the veins, which inspires or quickens it, with a certain leven or fermentation, and performs the same thing about its Spirit, or making it Spirituous, as our ferment commonly called Leven, doth, being put into a batch of bread or dough; for as a certain portion of the unbak'd bread or dough, being kept to a sourness, preserves the same nature, that it doth ferment or leaven other bread or dough, and stirs up in it the otherwise sluggish particles into motion; so it seems, that the blood being laid up in the milt or Spleen, and there getting a sourness, as it were by stagnation, puts on the nature of a ferment, whereby indeed the rest of the mass of blood, and perhaps the other humours, are actuated, and as it were Spiritualised, into a more lively motion. What hath been ingeniously wrote, by a late author, *viz.* the most learned *Veslhusius*, concerning the use of the Spleen, may have relation to this: for he hath determined as highly probable, a ferment to be contained in this Inward, whereby the sluggish particles of the blood, are brought into a state of activity: Because, taking notice, that in children, and others indued with a sanguine temperament, and more fat or dull habit of body, even as their manners, and disposition of minde were inclined to idleness, softness, and dulness, so their Spleen was ever of a reddish colour, and full of florid blood, like the Liver: from hence he concludes, that the spleen doth but little perform its office

fice in theſe, as the gential parts before ripe age, or in thoſe of weak loyns; but on the contrary, foraſmuch as men of a middle age, and chiefly in thoſe, who are of a ſevere Countenance, and of a lean body, as in them appear marks of cunning, Sagacity, fortitude, and conſtancy, ſo their ſpleen is found to be of a livid or blewiſh colour, and imbued with blood, as it were muddy: further he argues from hence, that the blood, being kept long in the ſpleen, as in a Conduit or receptacle, turns plainly into ferment, by which its remaining maſs, being from thence inſpired, is made more ſubtil, and begets more acute Spirits, both in the vital, and in the Animal Kingdom or Government: For he ſuppoſes, our bodies naturally to abound, with too much humidity, by which indeed the function of the parts, and many of the *viſcera*, are very much dull'd: but that the ſpleen, doth communicate to the maſs of blood, ſolid, firm, and conſtant parts, and not eaſily to be diſſipated; and that thoſe do wipe away that moiſtneſs, and with it carry away in ſome meaſure, that ſoftneſs, from the blood and Spirits, which is predominate in tender age: almoſt after the ſame manner, as the north-winde, or the eaſtern gales, fanning and intimately penetrating the air, with the dryneſs and ſtrength of their parts, breathe health or ſtrength to the air, and to our Bodies.

But ſince I have in another place, declared what I have formerly thought, concerning the Spleen, there will be no need to repeat it in this: yet I ſhall further note, that in bodies of living creatures, compacted out of a quinarie of elements, as the ſpirits ought to be more ſtrong then the reſt: ſo indeed they being intangled with a viſcous humidity of Sulphur, and water, are ſo hindred, that oftentimes they are not able to exerciſe their ſtrength or powers lively enough; hence ſaline particles, for that they are very much fermenting, are required for this, that the ſpirituous little bodies, almoſt overwhelmed by the embrace of the others, and ſtupifyed, might lie awakened, and ſet at liberty, and into motion. Wherefore we experience in our ſelves, when the ſpirits are dull'd, by the blood being too much exhal'd, that notable help is brought, by ſharp liquors, as chiefly ſmall wines, and Cider: for theſe kinde of Remedies ſharpen the Spirits, and ſhake off all heavineſs. Such a kinde of fermenting virtue, we eaſily believe to be continually exerciſed, by the Spleen being in right order, towards the blood and nervous Liquor.

For as this Inward is formed with a threefold ſort of veſſells, *viz.* with arteries, and veins, and beſides with great enfoldings of the nerves, and a moſt thick Conrexture of nervous *fibres*; we think the uſe of each of them, to be ſet apart for this end: to wit, by the Arteries, the blood is carried to the Spleen, hence it lays up its dreggs, compoſed of a fixed Salt, and an earthly matter, in its paſſages and poroſities, and theſe there layd up, as it were by a certain digeſtion, are brought into a juice very fermentive: A portion alſo of which, being carried back to the blood, by the veins, is continually mixed with it: and ſo its whole maſs, is inſpired with thoſe kinde of fermentive particles, from the Spleen; by which, a certain auſterity and ſharpneſs, with vigour of motion, is given unto it; ſo that, for that reaſon, the blood it ſelf is carried more lively in the veſſells; alſo from thence, the nervous juice, procreated from the blood, being more active ſupplies the animal regiment: But truly, the Spleen doth not only by this means mediatly, and by the intervention of the blood, inſpire the brain and nervous ſtock, with a fermentive virtue; but it may be lawfully believed, that this is done ſomewhat more immediately, by the paſſage of the nerves, diſperſed in the ſpleen: for, becauſe in this part, anatomie diſcovers a great company of Nerves, and nervous enfoldings, and of *fibres* ſpringing from them, it may well be doubted, for what uſe they ſhould ſerve: Concerning this, it is firſt to be obſerv'd, that the ventricle, and the Spleen, have a moſt intimate Commerce with the brain; inſomuch, that *Helmont* did place the ſeat of the Soul, in thoſe Inwards, but this is poſſible to be done, by no more commodious way, than by the aforeſaid nerves: Wherefore, we may here diſſervedly ſuſpect, that not only the animal Spirits, are the meſſengers between the one part, and the other, but alſo, that the nervous Liquour, which is both the food, and the ventricle of theſe ſpirits, doth deſcend now from the brain towards theſe Inwards, and now being received from theſe *Viſcera's* by the nerves, doth creep thorow towards the head: which kinde of ſpleeny Juice, being dila-

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ted to the brain, sharpens the animal Spirits, and raises them up being slothfull, and irritates them into quick motions: from whence it is commonly said, the sharpness and sagacity of the minde, doth proceed from the Spleen, and Splenetick people, are accounted Ingenious: But it is probable, that the rage, and force of the passions, being begun by the Spirits inhabiting the brain, are carried to the spleen, by the passage of the nerves; and so the spirits there dwelling, are pathetically troubled, and the blood flowing thither, is moved into a multitude of perturbations: for from hence it in some measure falls out, that in anger, sadness, and other distempers of the minde, according as the ferment if the Spleen, being more or less moved, is inspired to the blood, its liquor diversly boyls up: Further, for this reason it happens, that great inflations and Commotions, of the left *hypocondrium*, come upon splenitic people, from every violent passion.

The reasons of the hypochondriacal Symptoms laid open.

These things being thus premised, concerning the use of the spleen, it will be easie, according to our *hypothesis*, to lay open very many of the symptoms, belonging to the *hypochondriac* Distemper; and to give reasons for each of them: For when the Spleen is wanting in its office, that is, when it doth not strain forth the melancholly recrements of the blood, nor cook them into a fermentative matter, as we but now observed in children, and others of a sanguine Complexion, or too phlegmatick, to happen often; the disposition of the minde, is made duller, the body grows fat with idleness, yea, and the blood being more sluggish than it ought to be, is apt to stand still within its vessells, or at least to be less lively circulated: But on the Contrary where the fermenting power of the spleen, is too much axalted or perverted, the blood by that means being more sharp than usual, or made more sour, it runs about rapidly here and there, and conceives irregular motions; yea, and the nervous juice, falling away from its right temper, imbues the animal Spirits, with an heterogenious and an explosive *Copula*, and so irritates them, as it were with goads, into frequent Convulsions: as that not wholly undeservedly, many kindes of diseases, may be imputed to the Spleen being out of order: But the ways or means of affecting, whereby the Spleen being evilly disposed, doth produce the symptoms of the hypochondriack passion, or at least contributes to the rise of them, are chiefly these following.

The Influences of the Spleen in producing the symptoms unfolded.

First, it sometimes happens, that the spongie substance of the spleen, from the fæces of the blood, being too much impacted, in its pores, and stagnating, is very much stuffed, and obstructed: that from thence, it doth not sufficently receive, the recrements of the bloody mass: but the same being carried thither, but not received do flow back into the neighbouring branches of the Cæliack Artery, from whence they are presently carried, into the membranes of the ventricle, the Caule, the mesenterie, and other nigh parts, and are wont to be affixed to them; Hence the tone of those *visctra*, are so much spoyled, that they do not rightly performe their due offices, about the concoction of the Chyle, and the membranes planted every way about, being much imbued with heterogeneous and irritative particles, for that they are almost continually pulled by convulsions here and there stirred up, they are grievously obnoxious to wandring pains, contractions, distentions, and the encrease of Windes; by reason of this kinde of regurgitation of the blood, from the Spleen, being obstructed, it is likely, that the pulsation, which is felt by hypochondriacks, under the Ventricle, is excited.

2. When the fæculencies of the blood, are excluded from the Spleens being obstructed, being fixed (as was said) to its neighbouring parts, they bring forth the sickly distemper of the left *hypochondrium*: but though indeed, that Inward sufficently receives the melancholly or atrabilious juice, carried to it from the blood, by the Arteries, yet oftentimes it does not rightly Cook it, but the Salt being too much excited, it changes it into a too sharp, or acid, austeer, or sour; or some other kinde of vitious humour: whereby, when as the whole mass of blood, and the nourishable Juice, contained in its bosome, are almoit wholly infected, the fruits of the hypochondriack seeds, bud forth thorow the whole body; the blood grows unduely hot, is in some places impetuously moved, and again in others is apt to stagnate or stand still: from hence, it is familiar with Spleenetick people, presently after eating, to grow red in the face, to have the palms of their hands hot, their hypochondria to swell, oppressions of the heart, and noted variations of the pulse, to succeed, But these fermentative particles being translated, from the blood, every where into the solid parts, wandring pains, running

ing up and down here and there, and a ſenſe of pricking, are ſtirred up in many members of the Body: moreover, from this Infection of the blood, for that its maſs is changed, from a benign and balſamick temper, into a ſalt and tartareous, a lean habit of body, with a black and dark Countenance, is induced.

3. From the blood being ſo depraved, by the fault of the Spleen, oftentimes the taint is carried to the animal government; for heterogeneous and Convulſive Particles, are poured frequently into the brain, and from thence, into the nervous ſtock; ſo that the animal Spirits, dwelling in either province, conceive various irregularities: by reaſon of the evill being impreſſed on the head, hypochondriacks uſe to be troubled with various phantaſms, with an heap, and fluctuations of thoughts: beſides, to them happen frequent *Vertigoes*, Scotomies, headaches, and often parlytical Diſtempers: then, foraſmuch as the morbific matter, ſlides down from the head, into the nervous ſtock, Convulſive Diſeaſes are excited, in very many parts of the body, but chiefly about the *Præcordia*, and *Viſcera* of the lower belly: for when the Spirits flowing within the nerves, which reſpect thoſe parts, are greatly diſturb'd, by reaſon of the diſtemper of the minde, the Convulſive particles, the more readily enter into thoſe pipes, and more eaſily impreſs on thoſe Spirits, a Convulſive Diſpoſition: Therefore, partly by reaſon of the infection mediatly tranſmitted to the Brain, and partly by reaſon of the hurt, (as hath been ſhown) immediatly Communicated from the Spleen, the Palpitation of the heart, trembling, and frequent ſwooning, Conſtrictions of the Breaſt, impediments of breathing, Pains of the ſtomach, belching, Vomiting, and many other accidents in thoſe Inwards, happen to hypochondriacks.

4. Beſides theſe inordinations, which are wont to be derived by the paſſage of the blood, from the Spleen; into the humours and ſollid parts, and to the brain it ſelf, and nervous ſtock; there are other farther evills, which ſeem to ariſe from this Inward, alſo by the paſſage of the nerves: Becauſe, as we have ſhown, their extreme branches, and the nervous *fibres* themſelves, interwoven in the *Viſcera*, do drink in with their outward moſt little mouths, a certain humor, and convey it ſometimes upwards, it is highly probable, that the nervous *fibres*, diſtributed to the Spleen, (of which as we but now hinted, there is a mighty Guard) do receive its moſt ſharp juice, which Creeping higher, thorow the nervous pipes, becomes a Cauſe of Convulſive motions: In truth, that there may be thoſe intimate Commerces, between the brain, and the Spleen, to wit, far ſooner, than what can be made, by the compaſſing about of the blood, it may be lawfull to believe, that the nerves of the wandring pair, and the intercoſtal, to be the neereſt means of the paſſage, whereby theſe parts Communicate one with the other, and mutually affect themſelves. For it ſeems, that when the black bile or melanchollic tumor in the Spleen, grows turgid or ſwells up of its own accord, or is moved by ſome evident cauſe, its particles enter the nervous *fibres*, thickly diſtributed to the ſame, which diſturb the animal Spirits flowing in them, into exploſions, or at leaſt into ſome diſorder: then the Spirits being ſo diſtrubed, infect thoſe next to them, and they others, till by their continued ſeries, the paſſion begun within the Spleen, is propagated even to the brain, and there produces inordinate Phantaſms, ſuch as happen to hypochondriacks, alſo on the other ſide, when a grievous diſtemper of the minde, occaſionally excited, within the brain, doth diſturb the Spirits inhabiting it, the impreſſion being carried to the Phantaſie, by the ſeries of the Spirits, planted within the nerves of the wandring pair, and the Intercoſtals, and ſucceſſive affection, it is brought even to the Spleen; hence its ferment being put more into commotion, ſtirs up Convulſions, both in that Inward, and in the whole neighbourhood of fibres and membranes; and beſides, forces the blood into ebbings and flowings, and into various æſtuations or vehement motions; yea and reflects the perturbations of the Spirits, upon the brain. From this kinde of reciprocal affection of the brain and Spleen, it comes to paſs, that hypochondriacks are ſo unquiet, unſtable, and fluctuating, at every thing thats propoſed, as if, according to the Poet, Ten mindes ſtrove in them at once.

A certain noble Gentleman, of a melanchollic temper, and always accounted for a Splenetic man, very much complained of a pain, and inflation of his left hypochondrium, with a frequent rumbling noyſe, and ſour belching, alſo of a trembling 1. *Obſervation.*

trembling of the heart, of an assiduous vertigo, too much waking, and a disturbed phansie: About the 35th. year of his age, the disease growing worse, he began hardly to sleep, and yet more rarely to get it at night, and to be molested in the day time, with a world of fluctuating thoughts, to have in suspition all things and persons, and greatly to be afraid of every object: his *Præcordia* seemed to be very much bound, and straitened, and to sink down to the bottom, as if the heart it self were depressed even into the belly; which Symptom, troubling him, he became very sad, and dejected in minde: yet afterwards, those distempers of the minde remitting, he felt with it his heart to be a little lifted up and also his *Præcordia* to be loosened, and stretch'd forth; besides, he very often sustained pains and Contractions variously excited, about the muscles of the *Viscera*, and Members, and running up and down here and there.

As to the nature of the disease, it is plain, that it is this kinde of Distemper, which is commonly called hypochondriacall: but as to what respects the Causes of these to be admired Symptoms, we may suppose, the mass of blood being degenerate, and stuffed with melanchollic or atrabilarie fæculencies, to administer or continually to suggest its adust recrements to the head; from whence, the Liquor watering the brain and nerves, being made sharp, and improportionate to the Spirits, did stir up the containing Bodies, into painfull Corrugations, or wrinklings, and Contractures: Further, when this Infection is chiefly derived from the head, into the Nerves of the wandring pair, and the intercostall, the brain and the *Præcordia*, are very much punished, by the malady from thence raised up. But that the Blood is depraved by that means, it seems to be imputed to the vice of the Spleen, forasmuch as this Inward, being amiss, it did not rightly strain forth the atrabilarie dreggs from the blood, but rather did more pervert whatsoever recrements it received from it, and the same being exalted into an hurtfull ferment, sent it back to the blood, and so very much infected its mass, and imbued it with a plainly acetous, and vitriolick evill Disposition.

It is plain to be understood, that those symptoms troubling the Head, *viz.* too much waking, the *vertigo*, a disturbed phantasie, with many others, did proceed from the heterogeneous particles poured forth from the Blood, into the brain: As to that straitness of the Breast, and falling down of the heart, with great fear and sadness, it may be thought, that the nervous *fibræ*, inserted to the heart, and chiefly to the *Pericordium*, being moved into Convulsions, and wrinklings, do binde hard those parts, and pull them downwards; wherefore, there is perceived in the whole breast, as it were a certain constriction, and the heart it self seems to be depressed: Further, forasmuch the *Præcordia* being so streitened and depressed, the blood within the bosom of the heart is stop'd, and compell'd, as it were to stagnate, both the vital and the sensitive Soul, is much hindred, from its wonted expansion and irradiation, and for that Cause, being lessened and shortened in its constitution, those Cruell distempers of fear and sadness arise, but when the Convulsions remitting, that constriction of the heart and its *appendix*, is released, the Soul also, as a flame more expansed or enlarged, endeavours by little and little to shake off the Chains of those Passions. For the Cure of these Distempers, he had for a long time tried very many remedies, and medical Administrations, but without much benifit, at last he was somewhat eased by the use of Spaw-waters, and from thence by degrees finding himself better he became free from those grievous Symptoms, however, he still liv'd obnoxious to the *hypochondriac* Distemper.

2. *Observation.* A Certain young Academic, originally of a Sanguine temper, fair, of a florishing Countenance, excellent disposition, and mild, by reason of immoderate and untimely Studies, in the mean time exercise, and good order of dyet being wholly neglected, had contracted an obstruction of the Spleen, or some other morbid distemper of that Inward: For he had almost continually infesting him, an inflation, and tumor of the left *hypochondrium*, with a most heavy *Pain*. After he had laboured with this sort of Distemper, about half a year, he began to complain of a frequent giddiness, a blindness of his eyes, an unquietness of his minde, and of disturbed sleeps: Which Symptoms were then plainly imputed to vapours arising from the Spleen: but after that followed, a trembling of the heart, with a frequent *deliquium* of the Spirits, a pulsation of the *hypochondrium*, and at length pains, and Contractions in the outward members, with a frequent

quent ſtupor, and a ſenſe of pricking running up and down here and there: and laſt of all, being broken with a world of evills, contrary to his *genius*, and native Diſpoſition, he became greatly hypochondriacall.

That I may diſpatch the Pathologie of this Caſe in a word, it appears here plain enough, that the Spleen was firſt of all in fault; by whoſe fault, when the bloody maſs was depraved, the taint creeping from thence, into the humour watring the brain and nervous ſtock, and infecting it, did induce the aforeſaid Convulſive Symptoms.

The Method of Curing the Hypochondriac Diſtempers.

The Curatory Method to be uſed againſt the hypochondriacal Diſtempers requires chiefly theſe four generall Indications. *viz.* In the firſt place, that the Impediments of the Cure may be taken away, the Intention of which chiefly reſpects the purging, and preſerving the firſt paſſages. Secondly, it muſt be endeavour'd that the obſtructions of the Spleen, may be Corrected. Thirdly, that both the recrements of the bloody maſs may be purged forth, and that its due diſpoſition may be reſtored. Fourthly, and laſtly, that the enormities of the brain and nervous ſtock, and alſo of the watering humour, and the inhabiting Spirits, contracted by the fault of the blood, and Spleen, may be amended, or taken away: when any of theſe Intentions, or all of them together, ſhall be endeavoured at, fit times ſhould be choſen, in which each being ſingly propoſed, may be performed, without any neglect or hindrance of the reſt.

8. As to the firſt Indication, when a great load of crude or aduſt matter, is wont to be laid up in the firſt paſſages, and when the tone of the Ventricle us'd to be ſpoyled, and its ferment variouſly perverted, againſt every one of theſe kindes of evills, you muſt bring timely help, with fit remedies; therefore, gentle and moderate evacuations, both by Vomit if it proſpers well, and by Stool, ought to be adminiſtred: For ſuch, whoſe ſtomach eaſily caſts forth its contents upwards, I perſwade, that once in a month Vomiting ſhould be ſeveral times provoked by taking *Liquor of Squills*, or *Salt of Vitriol*, or by drinking plentifully ſmall beer poſſet-drink, or warm water; in the time between, a gentle purge, and only a little moving is to be orderd often: For this eud, The pills *Tartareous*, of *Bontius*, or Stomach-pills with Gums, or our ſolutive extract, may be of uſe. Take of the beſt *Senna* ℥i, of *Rhubarb* ʒvi, of *Epithim* ʒiii, of *yellow-Sanders* ʒii, of the *Salt of wormwood* ʒii, of *Celtic Spike* ʒi, being cut and bruſed, let them be digeſted in x ounces of *White wine*, and as much of fumitory water, for 48 hours, let the clear ſtraining be evaporated, with the heat of a gentle bath, to the conſiſtency of an extract, adding towards the end, of the powders of *Senna*, of *Rhubarb*, and *cream of Tartar* each ʒii, let them be bruſed together in a glaſs morter, and reduced to the conſiſtency of Pills. The Doſe ʒß, ℈ii, or ʒi, the Remedies reſpecting the tone, and ferment of the ventricle, as they are manifold and divers, out of them the moſt fit or commodious for the Diſpoſition of the Ventricle, are to be choſen; for to this bitter things, to that Saltiſh, to another ſharp and perhaps biting things, are deſirable. Among the number of theſe kinds of medicines, (which are commonly called Digeſtives) are *Elixir Proprietatis*, *Tinctura Sacra*, *powder of Aron* Compound, *Salt of Wormwood*, *Cream of Tartar*, *Tartar vitriolat*,, *Vitriol of Steel*, with many others. Beſides theſe inward Remedies, alſo external applications do often bring help: Becauſe the Stomach being ill affected, a fomentation of *white-wine*, with *wormwood*, *century*, and other bitter plants boyled therein, alſo oyntments, or plaiſters, often bring help: Concerning which, there will be no need here to diſcourſe particularly; and to preſcribe forms of the Medicines themſelves.

2. The ſecond Indicatiou, for the mending the vices of the Spleen, (to wit, if there ſhall be in the ſame any obſtruction, Tumour, or pain, or ſimple dyſcraſie or Intemperament,) is wont to be performed, or at leaſt attempted, by Remedies both internal, and exrernal: Thoſe which are of the former Sort, fall in with thoſe indicated in the 3d place, (to wit, with ſuch, as for the purifying the Blood is intended) becauſe, when chiefly, or almoſt all, that which is carried, or born to the Spleen, is done by the paſſage of the blood, the irrigularities of the *Latex* of this, as well as of that Inward, by a Social labour, ought to be cured, with the joynt ſtrength of Medicines; by what means is ſhown by and by. In the mean time, ſome external Applications, under the form of a plaiſter, or an oyutment, or a fomentation, more neerly and immediatly reſpect the bo-

dy of the Spleen, and often bring notable help, forasmuch as they discuss tumors, and allay the Convulsive Distempers, and quiet them. Great plenty of these kinde of outward medicines, are every where extant among Authors, the choyce of which ought to be made, according to the various passions of the Spleen, or the divers Constitutions of the Patient, so that there will be no need here, to shew their particular forms.

3. The Remedies indicated in the 3d place, to wit, which take away the dyscrasies or evill temper of the blood, contracted from the vice of the Spleen, and also clear the primary fault of the Spleen, are of a manifold, and divers kinde, and manner, the choice of which ought to be administred, according to the various infection of this, or that: of these, some are compounded, and prepared according to the prescription of Physitians, as *Electuaries*, *Powders*, *Apozems*, *Tinctures*, *Infusions*, and the like; others more simple, as *whey*, *asses milk*, *Spaw-waters*, and *Bathes*.

There are two chief Cases of sick people, in which magisterial Remedies ought to be all accommodated, according to their strength and quallities: to wit, either the blood is thick, coldish, and earthy, with the Spleen being obstructed, which requires more hot, fermenting, and chiefly Chalybiate medicines; or the blood being clearly aduſt, and hot, ferments too much, and together greatly troubles the *hypochondria*, and in them, the blood and humours boyl up; in which state, Remedies only temperate, and allaying the fermenting, and immoderate boyling of the humours, are to be chosen, where chalibiats are wholly to be avoided.

When therefore to a cold ventricle, cold discrasies or evill temperaments, of the blood and Spleen also happen, I am wont to prescribe, according to the following forms.

Take of the *Troches of Rhubarb*, of the *Powder of the root of Aron*, of *winteran Bark*, each ʒii, of the *root of virginian Snakeweed*, *Centrayerva*, *Diatrion Santulon*, of *Crabs eyes*, each ʒi, of the *extract of Gentian*, of *Century*, each ʒiß, of *ammoniae*, dissolved in the water of *Earth-worms*, what will suffice to make a mass of Pills: let them take 4 pills in the morning, and at 4 a clock in the afternoon, drinking after them a little draught, of *wormwood-wine*, or *chalibiate wine*, with moderate exercise.

Take of the *Conserves* of the *yellow of Oranges*, and of *Lemons*, each ʒiii, of preserved *mirabolans*, *n.* ii, of the *Species* of *aromaticum Rosatum*, of *winteran Bark*, each ʒii, of the *Salt of wormwood* ʒii, of the *vitriol of Steel* ʒi, (or *Steel prepared* ʒiii.) with what will suffice of the *Syrrop of Citron rines*, make an Electuary, To be taken twice a day, drinking after it a draught of *wormwood-wine*, or of the Infusion of the *herb* or *flowers* of *Tamarisk*.

For those who are not pleas'd, but with medicines in an elegant form, and in a very little quantity, the tinctures of *Antimony*, and of *Corrall*, also of *Steel*, with the *Spirit of wine*, (the body being first dissolved by a proper *menstrum*, and reduced to a *Calx*) are convenient: as also the *Spirits of Sut*, of *blood*, or of *harts-horn*, to be taken twice a day, with a proper liquor, to 12. drops, more or less, are of known benefit, above any other medicine that I know of: moreover the often drinking of *Coffee*, also that made of the Infusion of the leaves of *Thea*, gives ease to some.

If that the fervor of the blood, and too fermenting, with the trouble of the Spleen, and unquietness of the minde, be joyned to the hypochondriac Distemper.

Take of the *Conserves of hyps* or *Conaradine*, ʒvi. (or of the flowers of *Tamarisk*, and the leaves of *wood-Sorrel*, each ʒiii.) of the *Species* of *Diarrodon Abbatis*, of the confection of *Alkermis*, each ʒi, of the *powder of Ivory* ʒiß, of *Pearls* ʒß. of the *Salt of Tamarisk*, and *wormwood*, each ʒi. with what will suffice of the *Syrrop* of *green Citrons*, or *Clove-Gilliflowers*, make an Opiate, to be taken twice in a day, the quantity of a nutmeg.

Take of the *powder of Ivory*, ʒii. of the *Powder* of *Pearls*, ʒi. of the *Species* of *diarrhodon Abbatis*, of *Diamagarit frigida*, each ʒiß. make a fine powder, add of *white Sugar*, dissolved in *Baume-water*, and boyled to the consistency of Tablets ʒ vi. make thereof according to Art, Lozenges, or little cakes: take ʒiß or ʒii twice a day. To these, and other medicines of this nature, may be joyned the use

uſe of Spaw-waters, which indeed, in either, yea, in all caſes, of hypochondriac Melancholly, are almoſt always taken with good ſucceſs: For want of thoſe waters, our artificiall Spaw-waters, may be conveniently ordered, yea, and whey, and if any notable atrophie be, let Aſſes milk be dayly taken.

Beſides, theſe inward Remedies, and other outward Applications, before-recited, *Phlebotomie*, or the taking away of blood with Leeches, from the ſedal veines, may be of uſe frequently: yea, ſometimes it may be convenient, to open the Salvatella Vein, according to the preſcript of the Ancients: Beſides Cauteries, or Iſſues, which may continually carry forth the aduſt recrements of the blood, and by degrees excern them, are wont to be benificiall almoſt to all.

4. The fourth Indication, reſpecting the affections of the brain, and nervous ſtock, or the Convulſive Symptoms having relation to or coming upon the former, is rarely in uſe of it ſelf, and apart from the others, but that Remedies deſtinated to this end, are complicated with thoſe aboveſaid. Liquors indued with a volatile Salt, or an armoniac, as *Spirits of Harts-horn*, and *Sut*, are highly neceſſary for this Intention, as alſo the reſt but now recitied; wherefore ſuch Remedies, unleſs any thing ſhall ſhew the contrary, may be dayly given at fit hours. Further, when Spaw-waters are drunk, let tablets or pills, ſuch as are above-preſcribed, for the Convulſive diſtempers, be taken at leaſt twice in a day. In the frequent turning, and giddineſs, alſo in the paſſions of the heart, the ſinking down of the Spirits, with dread, and as it were a fear of Death, juſt ſeizing on one, I have known very often, great help to be had, by the uſe of Chalibeat, or ſteel Medicines.

The preparations and effects of Steel Medicines unfolded.

Since we have made mention ſo often, of Chalibiat or ſteel-medicins, it will be worth our while, to inquire into their various preparations, and for that reaſon their divers manners of effects, which they are wont to produce in the humane body, that it may from hence appear, by what means, and for what reſpects, theſe or thoſe preparations of Iron, are greatly profitable to ſome hypochondriacks, and to others as much hurtfull.

The virtue and operation of Chalybeat, or ſteel'd mecicines, depends upon the potticles of the concerts, being after a various manner diſſolved, unfolded, and brought forth into act: For ſteel, or Iron, conſiſts chiefly of a *Salt Sulphur*, and *Earth*: and but ſlenderly indued with Spirits and water: But the particles of the former Elements, chiefly the Sulphureous, and ſaline, being in their mixture combined together, with the Earth, remain altogether fixed, and ſluggiſh, but being ſoluted, and pulled one from another, they come to be of a very efficacious Energy.

The aforeſaid particles are diſſolved in a twofold manner, and ſet into the Liberty of acting: *viz.* either by Art, whilſt medicins are prepared, or by Nature after they are taken inwardly; for the metallic Body, is wont to be diſſolved, and eaten, by the ferment of the ventricle, juſt like a Chymical *menſtrum*: we will conſider the ſeveral *Species* of either, and their manner of being made, that it may appear, what alteration is impreſſed, on the ſteeled medicine, in the preparation; and what effects every preparation of it, doth impreſſe on mans Body.

The moſt ſimple way of preparing Iron, is a diviſion of its body, into little integral parts, with a file, which reſemble the nature of the whole mixture, and contain both little ſulpureous bodies, and ſaline, combined among themſelves, and with other terreſtrial. The filings of Iron being inwardly taken, is diſſolved by the ferment of the ventricle, as it were by an acid *menſtrum*; the ſignes of which are, both a ſulphureous and uuſavorie belching, as from the eating of hard eggs, alſo the blackneſs of the ordure, from ſteel being diſſolved within the *Viſcera* of Concoction, active particles, both Sulphureous and Saline, Plentifully ſally forth, and being involved with the nutritious juice, are carried into the blood; which as they excell in a divers virtue, do often conſpire, as it were with the joynt forces of either, to bring benefit to the ſick. The Sulphureous little bodies being brought to the blood, add to it a new, and more plentifull Proviſion of Sulphur, wherefore its maſs, if before it was poor and liveleſs, doth nimbly ferment within its veſſells, and being inkindled farther in the heart, acquires a more intenſe heat, yea, and a deeper colour; for it is ſo obſerved, in many affected with the dropſy, ariſing from white phlegm, the Pica or evill

longings, or green-sickness, to have a pale countenance, cold bloud, and waterish; but by the use of steel, the countenance soon to be more florid, and the blood to be imbued with a more intense tincture, and heat: moreover, from the filing of Iron, dissolved in the ventricle, also Saline particles are brought forth, and often they bestow a more plentifull encrease, both on the solid parts, and on the humors; for since their natures are vitriolick, and stiptic or binding, they bind together and strengthen the too lax, and weakned *fibres* of the *Viscera*, and so restore the broken tone: Besides these Saline particles, inhibit the force of the blood, repress it from too much heat, and boyling up, and froth, and retain it in an equall circulation: Besides (which is their chief virtue) they contract and straiten the too loose, open, and gaping little mouths of the Arteries; that, for that reason, neither the *Serum*, nor the bloody *latex*, may sweat out, or be broke off, from the file of its circuit: Wherefore in the Dropsie, and great bleedings, Remedies, imbued with the Saline particles of Iron, are of famous and efficacious use, for very many Diseases proceed from this cause, forasmuch as the little mouths of the Arteries, being too open, and the interspaces of the vessells above measure loosned, the *serum* or bloody *latex* breaks forth; which kinde of Affections, the Vitriollic Particles of Steel, do often help, by binding and corroborating, the sanguiferous Vessells, and nervous *fibres*.

After this manner, the *filings of Steel*, being taken inwardly, seems at once to add to the blood, both spurs, and a bridle. But forasmuch, as from this medicine, an incitation, much more than a restriction, doth arise, therefore it ought to be given only to them, whose blood is very thick, and cold, as country people and strong persons; in very hot, and spirituous bloud, and in hot inwards, 'tis no ways convenient: moreover, in delicate persons, and men of a more tender constitution, 'tis dangerous, lest the little portions of the steel, when they cannot be sufficiently dissolved, should like fragments of glass, be driven into the membranes of the *Viscera*, and there pertinaciously sticking, produce some ulcer, or deadly torments, which indeed I have known sometimes to happen.

2. After the filing of Iron, the next way of preparing it, is calcining it with Sulphur, to wit, let thin peeces of steel, being strongly fired, be laid upon a roler of *Sulphur*, that the mettle may melt into little round balls, which are to be calcined to the consumption of the Sulphur, and pounded in a morter, are to be reduced into a subtle powder, which is of choice use. In this preparation of Iron, some sulphureous particles are exhaled, the signe of which is, that this powder, an acid liquor being poured upon it, much less boyls up, or grows hot than the limature or filing of Iron: but being taken by the same mouth, it excites a Sulphureous savour. In the mean time, in this preparation, the saline particles, seem to be somewhat augmented, by new ones sticking to them, from the mettall burning with Sulphur, so that active particles of either kinde, to wit, Sulphureous and Saline, come almost to an *Aequilibrium*: and when by this means, this medicine, the substance of the mettle being loosned, may be finely poudered, it becomes of far more excellent use, than the filings of Iron: In most Cases, where steel ought to be given in substance, as in a Cachexie or a fullness of evill humours, the longings of maids or the green-sickness, and such like, this medicine is convenient to be used.

3. In the third place, follows the preparation of steel with vinegar: to wit, the filings of the whole steel, is moysten'd with vinegar, and dryed, till it may be reduced into an impalpable powder: in this preparation, the Sulphureous particles are yet much more, yea, as to the greatest part evaporated, only a few being left, in the mean time, the Saline, by reason of others sticking to them, from the vinegar, are much encreased, which are mingled with the terrene particles: This chalibiated powder, very little or nothing froths, or boyles up, a sharp liquor being sprinkled upon it, also being taken at the mouth, has with it scarce any sulphureous Savour: wherefore, it conduces less, to the taking away of the obstructions of the Bowells, or to the restoring the ferment of the blood: nevertheless, in a more hot Constitution, in hemorrhages or fluxes of Blood, and the hypochondriac Distemper, it is wont to be administred with greater success, then the former preparations.

4ly. Follows the rust of Iron, which being an extract of the metallic body, seems to be as it were a fifth Essence: because, in this excrescency, some particles

cles of every kinde, to wit, ſulphureous, ſaline, and terrene, being looſned from the whole ſubſtance, are combined among themſelves; and conſtitute as it were a new mixture, more ſubtile, and defæcated or clearer from dreggs: For that in this concrete, there remains leſs particles of ſulphur, therefore it doth not ſo potently ferment the blood, or take away the obſtructions of the *Viſcera*, as ſteel prepared with ſulphur; but in more hot diſtempers of the parts, or humours, it egregiouſly performs the requiſite Intentions, of a ſteeled Medicine.

To this Claſs may be referred by right, our preparation of ſteel, to wit, in which all the particles of the mettal, being looſned from the bond of mixture, are contained together: which notwithſtanding, (the concrete being firſt reduced into pouder) and immediatly diſſolved, in any water or Menſtruum. This powder being inwardly taken hath the like vertue as ſteel prepared with ſulphur; but to the liquor or menſtruum, in which it is diſſolved, it imparts almoſt only ſaline, or chiefly vitriolic particles, the ſulphureous flying away, and the terene ſinking to the bottom. I am wont to give in great quantity, and not ſeldom with excellent ſucceſs, common water impregnated with the diſſolution of this, inſtead of the natural acidulous or ſpawiſh waters: moreover, I make thereof medicated wine, beer, cyder, whey, or other Liquors, this pouder being diſſolved in them; and preſcribe them to be taken, for ſeveral intricate Intentions: So much for the preparations of Iron, in which the elementary particles of every kinde, are comprehended in a various proportion: There remain others, in which the particles almoſt only of one kinde, to wit, the ſaline, or earthie, are left, the reſt, as to the greateſt part, being driven forth: of which ſort, are chiefly vitriol, or the Salt of ſteel.

5. For the making the vitriol of ſteel, firſt, the mettal is wont to be eaten thorow, with a very ſharp and corroſive Liquor, and to be diſſolved into elementary parts: In the diſſolving, the ſaline particles of the menſtruum, are joyned to the other ſalines of the Iron, and are with them intimately combined; in the mean time, the remaining ſulphureous, and terrene, being laid aſide, and excluded from their company; then common water being poured to this ſolution, the ſalts of either kinde being combined, are imbibed by the Liquor, and that being laſtly filtrated, and evaporated, they are reduced into chriſtalls. This kinde of making of ſalt or ſalification, ſuccedes, if you do it, either with the Spirit of vitriol, the oyle of ſulphur, or ſtygian water, or any others, diſtilled from the ſtagmas of mineralls: Yea, *Sal Armoniac* only, being ſoluted by melting, diſſolves Iron after the ſame manner, and cauſes it to Chryſtalize.

Salt of Steel thus prepared, hath a ſweetiſh taſte, with a certain ſharp ſtipticity or binding, and participates much of the nature of *vitriol*, that it ſeems not to differ much from Verdigreaſe. Taken inwardly for a medicine, it ſomewhat ferments the humors, and powerfully bindes the nervous *fibres*: for cold Cachectical, and Phlegmatic people, this medicine is not convenient, becauſe there are in it no particles of *Sulphur*: but it is often adminiſtred with ſucceſſe, in hot diſtempers of the bowels, where there is a predominancy of aduſt *Sulphur* and in wandring effervеſcencies, in ſcorbutical, and unequall heats, both of the blood and nervous ſtock, by it ſelf, or mixed with other medicines, as an enforcement: but yet in more tender Conſtitutions, 'tis dangerous, leſt the tone and *fibres* of the ventricle ſhould be hurt, by its acrimony, and too great conſtriction or aſtringency.

6. In the laſt place, follows the aſtringent *Crocus Martis*, or the *Crocus of Steel*, prepared by fire, through a long Calcination, *viz.* The filings, the off-ſcourings, or thin plates of Iron, ſhould be ſo placed in a reverberating fornace, that they may be continually heated, by a moſt ſtrong flame: The filing being thus expoſed to the naked fire; firſt of all it grows reddiſh, and runs together into little hard round balls; but after 3. or 4. days, ſwelling up ſuddenly into an higher heap, it becomes extream light, impalpable, and of a moſt curious purple Colour: In this preparation, the Sulphureous and ſaline particles, whilſt by the force of the fire, they begin to come away from the concreet, do mutually take hold one of another, and ſo being combined together, grow into little balls; but afterwards, thoſe particles, both Saline and Sulphureous, being wholly profligated, and fiery particles ſucceeding in their place, the whole maſs ſwelling up into a bulk, and made as it were ſpungie, becomes moſt light.

A Medicine thus prepared, in some Cases, is of most excellent use, and second to none of the Chalybeats: to wit, almost in all extravasations, or too great eruptions of the *Serum* and blood, as in outward *hæmorrhages*, or in inward bleedings, in the *Diarrhœa*, the *Diabatis*, and in a vehement Catarrh; also I have known no remedy better than this, in the *Ascitis*, or in the beginning of a Dropsie: and this also, I have heard to be highly approved of lately by a most famous and expert Physitian, of our own Country: Concerning which medicine notwithstanding, since it is wholly destitute, both of Saline and sulphureous Particles, and consists almost only of earthly and fiery particles, it is very ambiguous, by what faculty it operates, and produces so praise-worthy an effect in man's body; for there seems to be in this, left no more *Caput mortuum*, or dead head, or *terra damnata*, then in vitriol, or in any of the other mettalls, distilled be a most intense fire. As to this if I may Conjecture, it seems first, that to this preparation, some Activity is due, whereby it exerts it self, and unfolds its virtues, either by shutting up obstructions, or by binding together the Vessells, or nervous *fibres* of the *Viscera*, from the fiery particles, shut up in the most fixed earth, and from them breaking forth within the body: Bnt the chiefest reason of helping consists in this, that the earthy particles, the Saline (by which they were strickly held) being wholly gone, desire greedily to be reunited to them, or such like: Wherefore, this *Crocus martis*, being immersed in our Bodies, snatches to it self, whatsoever Salts it meets with, and intimately binds them, and so, while it sucks up like a sponge, very many saline particles, it takes away many enormities, arising chiefly from the flux of the Salts. By this means, *Burnt harts-horn*, *Spodium*, and *Antimony Diaphoretic*, when they bring help exert or put forth their virtues.

CHAPTER. XII.

Of the Convulsive Cough and Asthma.

An example of a Cough meerly Convulsive.

THe history before related, doth clearly manifest, that sometimes a Cough may be caused, without any great fault of the Lungs, by reason of the sliding down of the morbific matter, upon the pneumonick nerves, or those belonging to respiration: to wit, where it was shown, in the Case of the noble Virgin, labouring with Convulsive fits, and also with a grievous and continual giddiness, that, when by the prescript of the Physitian, a fomentation of Cephalic Decoction, was applyed to her head, presently the Giddiness ceas'd, and in its place follow'd a great Cough, without any Spitting, but night and day, almost perpetually troubling her: which without doubt hapned, by reason of the Convulsive matter, being driven from the brain, into the beginnings of the nerves: This kinde of example, of a Cough meerly Convulsive, more rarely happens, in persons of ripe years, as the like distemper I have not often seen: But in children 'tis usual, (also sometimes I have known it in Men) for a cough to arise, from a serous Colluvies overflowing the Lungs: which, when at first it was Simple, and moderate, afterwards it became vehement, and Convulsive; so that in Coughing the *Diaphragma* being drawn upwards, and held in a long *Systole*, or frequently repeated, the Lungs being greatly straitned, were much hindred in their motion. In the mean time, by reason of the breathing being hindred, and the blood being restrained within the *Præcordia*, and for that cause stagnating in other places, the sick were in danger of being choaked, and often acquired a livid, or dead countenance. But in this Case, besides the Convulsions raised up about the *Præcordia*, by the force of Coughing, the Ventricle also, being often brought Into a consent, cast forth by vomit, whatever it contained in its bosom: yea, and I know in some tender ones, after this manner affected, the Disease wandring from thence into other parts, did raise up Convulsive motions in the Face, eyes, and limbs, and at length became deadly. This kinde of Convulsive Cough is very frequent among children, and some years lays hold

This distemper frequent enough in children.

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on ſo many, that it ſeems to be plainly Epidemical; when it roots it ſelf, it is very difficult to be cured, by Remedies, yea often being long protracted, it is hardly otherwiſe to be cured, but by the ſtate of the year being changed.

The reaſon of it.

If the cauſes of the aforeſaid Caſe be inquired into, it will be ſo plain, to refer the procatartic or more remote cauſe, to the redundancy of the Serous humour in the bloody maſs, and in ſome ſort in the whole body; a portion of which matter, dropping forth from the little mouths of the Arteries, on the Lungs, creates the ordinary Cough; afterwards, when the ſerous Colluvies or heap of waters yet exuberateing in the Blood, and ſtuffed with Convulſive particles, is alſo heaped up within the head, the ſame entring the pneumonic nerves, increaſes the ſimple, into a Convulſive Cough: For when thoſe nerves, being irritated firſt about their extremities, are exa[illegible]ed above meaſure, for that reaſon they more eaſily imbibe the Convulſive [illegible]er, laid up nigh their beginnings: and ſo, when at length, they are driven into irregular motions, in two places, to wit, in the head, and at the tale, and that for two diſtinct cauſes, *viz.* from the irritation of the Spirits, and from their exploſion; it is no wonder. if the Cough, at firſt Common, being afterwards brought into this evill ſtate, becomes ſo cruel and Convulſive: Moreover, when it ſometimes happens, that the ſame matter, heaped up in the head, does enter ſome other nerve, therefore Convulſive paſſions of another manner, often come upon the Convulſive Cough.

The Convulſive Aſthma.

Having ſhown after this manner, that a cough doth ariſe, not only, nor always by the fault of the Lungs, but ſometimes from a ſolitary Convulſive cauſe, but oftener ſuperinduced by this, on a pneumatic Diſtemper: alſo we do not doubt to determine almoſt the ſame thing, concerning another certain Diſtemper of the *Thorax*, to wit, the *Aſthma*: For whether this Diſeaſe be continuall, or periodical, in either Caſe, the Symptom chiefly urging, is difficult Breathing; which indeed ſeems to be excited for this reaſon, becauſe the Lungs being too much inflated, and diſtended, extremely fills the Cavity of the *Thorax*, neither do they fall down as they ſhould do, by turns: hence the Spirit or breath remaining within, is not ſent forth freely enough, neither indeed can freſh aire be eaſily induced, by reaſon the ſpace is before filled: whileſt the Lungs are ſo longer contained in a continual, or very little remiſs Diaſtole, oftentimes the *Diaphragma*, is urged contrary to its manner, into a violent Syſtole, and being drawn upwards, is wont more and more to lift up the Lungs, and to hinder their falling down; whereby it comes to paſs, that reſpiration becoms yet more difficult, and more laborious.

Sometimes it depends of the Lungs, together with the nerves being affected.

We eaſily believe, that this kinde of hard breathing Diſtemper, doth ſometimes happen by the fault of the Lungs, becauſe anatomical Inſpection hath plainly detected it: For if a great Serous Colluvies, being layd up in the *Thorax*, very much ſtuffs the Lungs, and ſo much obſtructs all their pores and paſſages, that the blood being hindred in its Circute, cannot freely paſs thorow the Pneumonic Veſſells, for that reaſon indeed, ſuch like anhelous Diſtempers are ſometimes made: Then, as often as the blood growing more hot and rarified, by exerciſe or the heat of the Bed, requires a larger ſpace for its Circulation, within the Lungs; then preſently from ſuch an occaſion, a more frequent Reſpiration, or an aſthmatical fit is ſtirred up: If beſide this morbid Diſpoſition of the Breaſt, the Sanguineous maſs, alſo abounding with a ſerous water, ſhould be apt to ſudden fluxions and effervеſcencies of the Serum, from hence alſo, by reaſon of the violent courſe of the Serum growing hot, into the Lungs, being before obſtructed, and greatly filled, very often moſt grievous aſſaults of this Diſeaſe, and almoſt ſuffocating do happen. Moreover, ſometimes, beſide, the roots of the aſthma (as it is ſaid) being fixed about the *Præcordia*, certain ſhoots of the ſame diſeaſe, budding forth from the head, meet with the former, and being complicated with them, produce the more cruel fruits of the *Dyſpnæa*, or want of Breath. For, becauſe the Lungs being ſtuffed with *Serum*, another quantity of the ſame, more largely redounding in the blood, being imbued with Convulſive particles, is poured on the head, the ſame more readily entring the pnenmonic nerves, than others, cauſes the *Aſthma* of the *Thorax*, at firſt Simple and modetate, to become periodically vehement, and Convulſive.

Of theſe kinde of Diſtempers, *viz.* the *Dyſpnæa*, being excited by the ſingular fault of the Lungs, and with a Companion, very many inſtances, and examples

have

have fallen under our observation, and do almost dayly happen. For there is nothing more usual, then for those that are sick of an inveterate cough, or any other evill disposition of the Lungs, at length the Dropsie, or Scurvie hapning to become Asthmatick, to wit, when the Blood being made much more impure, lays up also its serous dreggs in the head, these more readily, and indeed more easily enter then others, the pnenmonic nerves, as being weaker, and often irritated neer their extremities, and in them do heap up matter, for a Convulsive *Dyspnæa*.

An Asthma sometimes meerly Convulsive proceeds from the nerves only being affected.

Further, sometimes I have observed, most grievous fits of an *Asthma* to have hapned, without any notable fault of the Lungs, so that truly I did think that this disease was sometimes meerly Convulsive, and its fits only excited, because the serous colluvies or watery h[illegible]eing stufft with, explosive particles, entring into the nerves, performing the Diastole of the Lungs, grows to the Spirits therein flowing, which being afterwards struck off together, and for a long while, by reason of plentitude or irritation, the Lungs are detained as it were inflated, and stiff, so that they can perform neither the offices of drawing in, or of breathing out: But the fit being finished, a free and equal respiration follow'd, as before the fit began, and no cough, or signs of a sickly disposition of the Lungs, did appear. As I have observed this kinde of *Dyspnæa* or difficult breathing meerly Convulsive, to have hapned in many, I will here shew you one or two histories of it.

A certain strong and fat Gentleman, having used for some time a more full and inordinate Diet, without any exercise, began to be ill about the beginning of the winter: at first he was troubled with a pain and heavines of his head, with a great giddines, and fear of swooning, and believing himself just about to dye, being otherways healthfull; within a few days, these Symptoms pass'd into an apparent *Stupor*, or rather Lethargie: he being let blood in his Arm, I caused carefully to be applied Cupping-glasses, Vesicatories, and sharp Clysters, with many other Remedies: In the space of 42. hours coming to himself, he was sensible, and shook off all torpor or drousines. But although his brain was cleared, yet he was taken with a great weakness, and numbnes in his members which Distempers however were shortly cured, with antiparyletic and antiscorbutic Remedies: But after a fortnight, he began again to complain of an heavines and giddines in his head, then the next day after, he fell into a horrid *Asthma*: that the Lungs being suddenly inflated, and endeavouring to come upwards, the Breath, which was very quick and laborious, was hindred, and not being able to come forth, he was in danger every minute of an hour to be choaked. This fit as it was cruel, so it pass'd over within 12. hours, without any spitting, cough, or vomit, and then, within a weeks space, he lost all the trouble of his breast; but then the like fit of the *Dyspnæa* or difficult breathing returning, exercis'd him somewhat more gently; and afterwards, he was wont to be troubled with such a fit of the *Asthma*, nigh to the great mutations of the Air, chiefly in great cold, or the falling of Snow.

2. Observation.

I knew another Gentleman, sick of an inveterate Scurvy, who having no manner of Cough, was troubled now with a great head-ach, and for many days with a giddines or *Vertigo*, then at another time, being free from those Symptoms, he was taken with a most cruell fit of the *Asthma*, and he endured these Distempers, now this, now that, frequently, but especially about the greater tropicks of the year.

The Reason.

It is not to be doubted, but in the aforesaid Cases, those fits of the *Asthma* did wholly depend, on the Convulsive matter, being fallen into the nerves, serving to the stretching forth of the Lungs, which cleaving to the Spirits, and being by them struct off, or explosed, by reason of plentitude or irritation, caused the *Præcordia* to be lifted uywards, and as it were inflated, and by that means hindred, from its reciprocal motion.

An Asthma sometimes excited by reason of the Bronchia being Convulsively affected.

Moreover, we suppose, that such a kinde of Convulsive *Dyspnæa* or difficult breathing, is sometimes excited, by reason of the *bronchia* of the *Trachea* (or the sharp arteries of the Throat) being too much streightned, and often almost drawn together: we have shown in our discourse of the Nerves, that very many branches of nervous *fibres*, and of the nerves, do every where embrace all the ramifications of the asper Arterie, and bind them about, which nerves if it happen,

pen, that they, being possessed by the morbific matter, should be irritated into frequent Convulsions, for that reason it follows, that the channells or passages which they compass about, must be greatly bound together, and in some places wholly shut up.

There was a very choyce Virgin, of a tender constitution, and of a flourishing countenance, scarce past the second lustre of her Age, (*i.e.* about 12. years old) that began to be grievously tormented with *Asthma* fits; and before she was entrusted to my cure, she had liv'd obnoxious to them at least 4. years. sometimes she remained free, from any fit of this disease, for two or three months: yet oftentimes, by reason of errors in Diet, or the great mutations of the year, or the air, she fell into most cruel fits of the *Dyspnæa* or difficult breathing: So that her Lungs being inflated, and carried upwards towards her throat, and there held almost in a continual Diastole, she could hardly, nay, not at all breathe; in the mean time, for that respiration might be somehow made, the *Diaphragma* and the muscles of the breast were exercised with repeated endeavours of motions. This kinde of fit by degrees remitting, within 7 or 8. hours, at length gave over; but then after a week or two, it was wont to come again, either of it self, or from any the least occasion; after that the force of the Disease, its matter being bestow'd on very many of these kinde of fits, pas's'd away, this excellent virgin was well enough for many weeks, yea sometimes months after, and breath'd freely, without any fault of the *Thorax*. For this person, I instituted this following method, Spring and fall, and now it is more than two years, since she has had any fit of this Distemper. 3 *Observation.*

Take of our *Sulphur of Antimony*, gr. vi. of *Cream of tartar*, vi, grains, mix them: Let it be given in the pap of a rosted apple, with this medicine she was wont to vomit 4. or 5. times: four days after, she took this cathartic, which was wont to be repeated, twice, after 6. or 7. days between: Take *Calomelan* xii. grains, of the *Resin of Jolop*, v. grains, of *castor* gr. iiii. with what will suffice of *Ammoniac* dissolved, make iii. pills: every day besides, she took morning and evening, of the tincture of *Antimony*, grains xii. in a Spoonfull of the following Julap, drinking after it 6. or 7. Spoonfulls of the same. Take of the *water of Snailes*, ℥vi. of *earth-worms* ℥iiii. of *water of penny-royal*, and *rue*, each, ℥iii. of hysterical water, ℥iii. of *Castor* tyed in a knot, and hung in the glass, ℈ß. of *white-sugar* ℥i. mix them in the glass, and make a Julap.

About the Autumn of the last year, another noble Virgin, being sick after the same manner, *viz.* with a Periodical *Asthma*, I was sent for to cure her, who received great help by the aforesaid Remedies, being used in a little lesser dose, and the same repeated at the first of the Spring. 4. *Observation.*

In these Cases also, nothing seems to appear more clearly, than that the cause of the Disease, without any phlegm or viscous humour, being impacted in the Lungs, as is commonly beleeved, doth subsist within the nervous stock; and that this kind of *Dyspnæa* or difficult breathing, meerly convulsive, is excited, by reason of the Pneumonic nervs, being possessed by the Convulsive Distemper. The verity of this may be yet more clearly evinced, by an anatomical observation, lately Comunicated to me, by the learned Physitian Doctor *Walter Needham*. That most famous man told me, that he knew a Butcher of *Wallsallen* in the County of *Stafford*, who when he had been long sick of a periodical *Asthma*, returning within 14. or 20 days at farthest, at length he dyed in a fit. The Body being opened, all his *Viscera* appeared sound, chiefly his Lungs, neither were there to be seen any signes, either of excrement gathered together in the *Bronchia*, or of the blood restagnating in the veins; this only hapned besides nature, that the bladder of the gall; contained in it many stones. But (added he) the causes unknown to us, certainly not Conspicuous to our eyes, were to be attributed to the nervous stock being affected. *An Anatomical Observation.*

Sometime past I was consulted with, about a noble child, who being about 12. months old, was grieviously afflicted with Convulsion fits, and as it were Epileptic, of which he quickly dyed. I often observed, that whilest the Convulsion of the outward parts intermitted, he was taken with a cruel sobbing, or hooping Cough: from whence I suspected, that the morbific matter, was no less fixed in the breast, than in the brain. But after its Death, the body being opened, the Lungs well furnish'd, appeared clear from any fault, that it clearly appeared *Another Anatomical Observation.*

peared that this cough meerly Convulsive, was excited by reason of the Distemper of the nervous stock.

As to what respects the Remedies, and curatory means, which ought to be used in the aforesaid cases, when that convulsive Symptoms come upon the Cough, or difficulty of breathing, first excited from the default of the Lungs, and so by reason of the taint, communicated to the brain; it must be carefully heeded, that Convulsive medicines be aptly compounded, with those respecting all the Intentions of the *Thorax*. Yea that sometimes these, sometimes those, being given by themselves, may between whiles fill up the times of curing, it will not be needfull in this place, to bring the bechic, or Pneumonic medicines, and forms of them, since an immense company of them, are extant every where, among Physical Authors. It will be sufficient for our purpose, to add a method of medicine, also some more select Remedies, convenient for the Cough, and *Asthma*, meerly Convulsive.

The cure of the Convulsive Cough. As to the former Distemper, which is most familiar to children, the cure is difficult, and for the most part not to be performed, but of a long time. The chief Indications, will be to purge forth, both the serous and sharp humours, from the blood and *Viscera*, that their inclination and falling down in the brain, and perhaps also within the breast, may be sometimes prevented; then to Corroberate those parts that they may not easily admit the superfluities, of the boyling Serum. For these ends, vomits and more gentle purges, for the most part are usefull, and in some measure ought to be repeated: Vesecatories are often profitable; yea, if the Disease be contumacious, Issues are to be made in the nape of the neck, or the arm, or about the Armpits. Drink and liquid aliments, are to be taken in a lesser quantity, than usual, and in stead of them, a Bochet is to be used, of *Sarsa*, *China*, *Sanders*, *Shavings of Ivory*, and *harts-horn*, with diuretic, and anticonvulsive Ingredients: In this Case, some remedies as it were special, are greatly commended, of which sort are pixed musk, given in powder, or boyled in milk, and so given dayly in a frequent dose: a decoction or *Syrrop of Caster*, and *Saffron*; decoctions of the *root of Peony*, *Misletow* of the *Oak*, also of *hyssop*, help many; the waters of *black-cherries*, of *Saxifrage*, and of *Snailes*, distilled with *Whey*, and appropriate ingredients, are often taken with success.

The cure of the Convulsive Asthma. 2. By what method, and with what Remedies, I have cured the periodical *Asthma* in some young ones, hath been already shown, But in most, distemper'd with this Disease the most famous *Riverius* hath observed, a vomit is chiefly helpfull, although he hath not rightly shown the reason: which indeed seems to consist in this, to wit, that this medicine, greatly shaking, and irritation the Emunctories, planted about the first Passages, strongly presses out from them, and carries forth of dores, the recrements of the blood and nervous juice, apt to be troublesome, and to restagnate on the brain, and Nervous stock. *Zacutus* the Lusitanian, highly extolls, and not without reason, a cautery to be made, sometimes in the hinder part of the head, sometimes in the nape of the neck, or about the Armpits: A preparation of *milipedes*, *viz.* in form of a dry powder, or a distilled Liquor, seldom wants success. For by such like Remedies, the superfluities of the *Serum*, are deduced from the head, and nervous stock, and carried away, thorow the urinary passages: For the same reason, a gentle purge, evacuating the ill juice, is often us'd: for this end, the decoction of an old Cock, with altering medicins, and gently purging, being stowed in its belly, is prayed by many: Besides, the remedies hitherto cited, some others are said to be appropriate, and as it were Specifical to the *Asthma*, of which sort are, the *bassom of Sulphur*, turpintsn'd, also *Spirits of Harts-horn*, or of *Sut*, impregnaeed with the same; *Syrop of Tobacco*, of *Ammoniack*, our *diasulphur Lohoch* of *Garlick*, pills of the *roots of Enula Campane* made up with the *milk of Sulphur*; with the *flowers of Benzoin*, with liquid pitch, or liquid amber, with many others, which would be too tedious here to enumerate.

And now the cheif *Species*, and manners of Convulsions, together with the Causes of the Symptoms, and the means of curing, being sufficiently explicated, it is time to put an end to this our Pathologie of the Brain and nervous stock, and to our Discourse of *Convulsive Diseases*.

FINIS.